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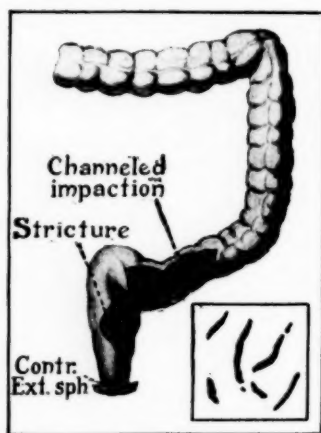
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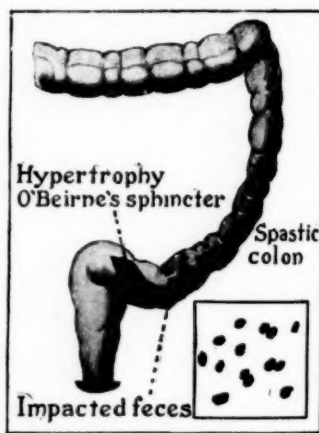
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New York, September, 1924

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Fractures of the Skull*

R. H. FOWLER, M.D., F.A.C.S.,

Brooklyn, N. Y.

The following studies comprise a series of 46 cases of fractures of the skull. The general mortality is 56 per cent. Eleven (23 per cent) cases were oper-

died within one hour or less, 6 cases died within the six hour period, 3 cases within six to twelve hours, 3 cases within twelve to twenty-four hours, 4 cases

AGE INCIDENCE—MORTALITY GENERAL—WITH AND WITHOUT OPERATION.

Decades	No.	Deaths	General Mort.	OPERATION				NO OPERATION			
				Immediate Result				Immediate Result			
				No.	Rec.	Died	Operative Mort.	No.	Rec.	Died	Mort.
16 mos. to 5 years.....	9	6	66⅔%	2	1	1	50%	7	2	5	71%
5-10	10	5	50%	4	3	1	25%	6	2	4	66⅔%
Total, 1st Decade.....	19	11	57%	6	4	2	33⅓%	13	4	9	69%
10-20	4	2	50%	1	1	0	0	3	1	2	66⅔%
20-30	5	2	40%	1	1	0	0	4	2	2	50%
30-40	8	4	50%	2	1	1	50%	6	3	3	50%
40-50	4	3	75%	1	0	1	100%	3	1	2	66⅔%
50-60	4	3	75%	0	0	0	0	4	1	3	75%
60-70	1	1	100%	0	0	0	0	1	0	1	100%
Children, age unstated.....	1							1	1		
Total	46	26	56%	11	7	4	36%	35	13	22	62%

ated upon with a mortality of 36 per cent. The remaining cases (35) showed a mortality of 62 per cent. During the first decade there were 19 cases which showed a general mortality of 57 per cent; of these 6 were operated upon with a mortality of 33 1/3 per cent. During the same decade there were 13 unoperated cases with a mortality of 69 per cent. Reference to the table will show age incidence, general mortality as well as mortality with and without operation during the various decades up to 70 years.

Analysis of Fatal Cases

From the time of admission to the hospital 8 cases

within twenty-four to forty-eight hours, 1 case after 96 hours and 1 case after 73 days. The latter was from a late cerebral abscess. Careful correlation of the clinical picture with postmortem findings reveals that probably no case could have been benefited by operation.

Analysis of Recovered Cases

There were 20 cases which recovered of which 8 could be followed. Residual symptoms persisted in 5 cases. These conditions in combination were headache (3), impaired hearing, Bell's Palsy (2), Strabismus (1).

*From the Surgical Service Greenpoint Hospital, from October 11th, 1915, to September 24th, 1917.

Comments

The pendulum in the management of fractures of the skull has again swung somewhat toward conservatism. Careful routine examinations to include lumbar puncture with the measurement of the spinal

falls, the respiration lessens and the pulse rate is reduced has discredited decompression. As regards the treatment of intracranial tension with magnesium sulphate results have varied and cannot be compared with those obtained by a lumbar puncture. It is gen-

Case No.	Age	Clinical Findings. Autopsy Findings.	Location and Extent of Fracture.	Operation.	Duration in Hosp. before D.
1	4	Coma, dil. rt. pup., p. 128, crepitus parietal region.	Vault.	0	Short interval.
15	34	Coma, extreme shock, Pul. Edema.	?	0	12 hours.
16	3	Coma, extreme shock, edema, eye rt. dil. rt. pup., hem. nose, mouth.	Deep fracture rt. parietal bone and ant. fossa.	0	1 hour.
31	21	Coma, hem. from nose.	Base, ant. fossa.	0	20 min.
40	16 mos.	Coma, extreme shock cracked Pot., temp 108, pulse, eyes div. to l., immen. hem.	Vault.	0	18 hours.
42	38	Jumped from 5th story.		0	2 min.
3	45	Coma. Subdural hem. cont. of Brain.	Base, occip. temporal.	0	Few min.
6	64	Coma, hem. l. ear, nose, mouth, crep. parietal and temp. bones, epidural clot (m. m. hem.), clots in pit and l. orbital fossa inj. 8 days before admission.	Base. Parietal, temp. sphenoid.	0	2 days.
9	19	Compl. hemipleg. L. side, swell. both fundi. After lumbar punct. p. 55-92. Rup. m. m. Subdural clot lac. rt. temp. l.	Base, rt. temp. and parietal, pit. fossa.	0	17 hours.
10	52	Coma, hem. rt. ear, nose, spas. extreme. T. P. rapid, sore. Lacerat. l. temp. lobe and conseq. subd. hem.	Base, rt. temp. sphenoid pituit.	0	24 hours.
11	7	Coma, pulse 110, spastic rt. arm, leg, foot, fract. femur clavicle.	Base, ant. fossa supra-orbital reg. Frontal bone.	0	Few hours.
13	50	Prof. shock, coma, hem. l. ear. T. 102, pulse 112, open fract. humerus, ribs, int. injuries, epidural clot, cerebral edema. Rupt. kid.	Base, occiput l. temporal.	0	34 hours.
14	25	Prof. shock, coma, hem. l. ear, nose, mouth, open fract. L. humerus, rt. tibia, rt. humerus.	Base, rt. temp. pit. fossa.	0	½ hour.
20	5	Fract. l. knee, abscess of brain.	?	0	73 days.
22	44	Coma, shock. P. 88-124. T. 106. Wet Brain, cont. lacerat. rt. frontal.	Base.	0	9 hours.
24	9	Deep coma, pulse 80, T. 98.3, nystagmus epidural clot (m. m. hem.) 4 x 2½ in.	Base, temp. sphen.	0	6 hours.
25	2	Deep coma, hem. from l. ear, dilated pup., epid. clot (m. m. hem.).	Base, mid Fossa.	0	12 hours.
29	Adult	P. 80, T. 98.2, epid. clot (m. m. hem.), lacerat. rt. temp. l.	Base, parietal and occ.	0	Few hours.
30	45	Inj. 12 days before adm., "fit" 2 days before adm., drowsy. Dil. of pup., rt. fac. paral., dil. of tong. T. 101.2, p. 124, meningitis.	Vault, open—disch. of pus. Bare bone—depressed.	Elev. of frag. dura perf. by spicules, opened.	12 hours.
32	32	Inj. 10 days before adm., p. 104, T. 101.2, cracked pot, left vault lat. nystag., unequal pupils, sero-pur. dis. l. ear. Bilat. Koenig. Throm. int. jug. vein. Meningitis. Subdur. clot lac. front and temp. lobes.	Vault, parietal temp.	Subtemp. decomp. Ligat. of int. jug. vein.	Few hours.
33	17	Coma, prof. hem. ear, nose, pulse 48. Lac. frontal lobes.	Base, middle fossa extensive.	0	1 hr. 20 min.
34	9	Coma, spastic, extreme irritable, hem. nose, mouth, pulse 140, T. 101. Lacerat. of Brain exten. subdural hem. occipital reg.	Vault, l. parietal Base, l. temporal through foramen magnum.	Subtemp. decomp. subdural hem. (exten.).	4 hours after op.
36	3	Shock—irreg., weak pulse, marked subdural hem.	Vault. Exten. down and back, from temporal.	Subtemp. decomp. epidural clot (m.m. hem.).	4 hours after op.
38	48	Restlessness, vomit, twitching both arms, l. leg, p. 74, T. 100-102, pup. dilated, exten. subaponeurotic hem. Subdural hem. lac. l. temp. lobe. P. 140-180. T. 4th day 104, 6th day 106, term. 106 3/5. Bilat. Koenig. Retract head, hem. l. ear, meningitis, adherent duralepto-meningitis.	Base, temp. bone extend. to parietal.	0	2 days.
44	2	P. 140-180. T. 4th day 104, 6th day 106, term. 106 3/5. Bilat. Koenig. Retract head, hem. l. ear, meningitis, adherent duralepto-meningitis.	Base, middle fossa temp. bone.	0	7 days.
46	7	Hem. nose, mouth, l. ear, multiple injuries.	Base, orbital plate to temp. bone.	0	Few min.

fluid pressure should be stressed. Cases which are desperately injured present an almost hopeless problem. These should have repeated lumbar puncture or decompression as seems indicated. The condition of prime importance is intracranial tension. Examination of the fundi, while not so important as spinal fluid pressure is not to be under estimated. Lumbar puncture is the most indicated and most helpful procedure, to relieve tension. During the initial period of shock no operation should be performed.

Operation as a last resort when the blood pressure

erally agreed that cerebral edema is the determining factor in the production of intracranial tension rather than hemorrhage. It is notable that no advance in the treatment of desperately ill cases has been made. Repeated lumbar puncture has reduced the number of cases requiring operation.

The present attitude concerning treatment of fractures of the skull is somewhat confused. There are no symptoms from fractures of the skull per se. Symptoms are due to intracranial damage and increase of intracranial tension should be the guide. A

LOCATION OF FRACTURES IN ANATOMICALLY STATED CASES

	Vault	Base	Total
No.	12	31	43
Recovered	5	14	19
Died	7	17	24
Mortality	50%	54%	56%
Open (dep.)	2	..	2
Recovered	1	..	1
Died	1	..	1
Mortality	50%	..	50%
Simple	10	31	41
	(and open int.)		
Recovered	4	14	18
Died	6	17	23
Mortality	60%	54%	56%
Operation	8	3	11
Recovered	4	3	7
Died	4	None	4
Mortality	50%	None	36%
No Operation	4	28	32
Recovered	1	11	12
Died	3	17	20
Mortality	75%	60%	62%
Depressed	5	None	5
Recovered	4	None	4
	Open		
Died	1	None	1
Mortality	20%	..	20%

classification has been offered which is based upon this feature. Frazier divides cases of cerebral injury into three groups—(1) serious from the outset—grow rapidly worse and die within 24 hours; (2) those which pass the 24 hour period gradually improve; (3) those of a less serious nature from the outset but which later show signs of medullary disturbance. It is in the latter group that Frazier considers operation justifiable. The first group constitutes by far the largest number of fatal head injuries. In this group Frazier apparently considers that the damage is hopeless from the outset. No finer judgment is necessary than to distinguish those which will be benefited by operation from those which will get well without it. The thought that cases constituting the first group are not inevitably fatal should guide us in our endeavor to reduce mortality by more careful selection of cases for operation.

Abstracts of Cases Which Recovered

Case 2. Record No. 75. Admitted October 6, 1915. R. G., male, age 30, sailor. Fell into hold of ship. In coma, abrasion and contusion over left parietal region. Hemorrhage from left ear and nose. Temperature 99 2/5, pulse 100. Two general convulsions. Gradually came out of coma. In a few days developed a motor aphasia. Convalescence was slow. Aphasia cleared up. Patient was discharged November 8, 1915, cured.

Follow up:—Not obtainable.

Case 4. Record No. 164. Admitted November 7, 1915. M. S., male, age 39, was thrown from a wagon, struck left side of head on the pavement. The fall stunned the patient for a few minutes only. Hemorrhage from the left ear, nose and mouth. There was a marked area of contusion and laceration over the left parietal region. Facial paralysis on left side; ptosis of left upper eyelid. Pupils equal, react to light and accommodation. Extremities, no paralysis, muscle power good in each. Reflexes—superficial and deep present and active. Ophthalmoscopic examination:—No raising of either disc, no retinal hemorrhage. Spinal fluid blood tinged. Fracture of base of skull left side, extending through the internal auditory meatus.

Discharge note:—Temperature, pulse and respiration within normal limits, facial paralysis and ptosis of eye-lid partially cleared up. Patient left hospital, December 3, 1915, in good condition.

Follow up:—March 19, 1917. Discharge left ear, impaired hearing, Bells Palsy left side (mid. and low. br. 7th). No headaches or vertigo, occ. move. and reaction O.K. Referred to O. P. D. for ears. 2nd Follow Up:—May 1, 1924. Failed to call.

				OPERATION			
Fossa	Rec.	D	Mort.	Total	Rec.	D	Mort.
1. Anteria	6	3	33 1/3%	9	2	0	0
2. Middle	3	4	57%	7	—	—	—
3. Posteria	1	—	None	1	—	—	—
4. 1+2	2	5	71%	7	—	—	—
5. 2+3	—	3	100%	3	—	—	—
6. Vault & Base	—	1	100%	1	—	1	100%
Total	12	16	59%	28	2	1	50%

				NO OPERATION			
Fossa	Rec.	D	Mort.				
1. Anterior	4	3	42+%				
2. Middle	3	4	57+%				
3. Posteria	1	—	0				
4. 1+2	2	5	71+%				
5. 2+3	0	3	100%				
6. Vault & Base	—	—	—				
Total	10	15	60%				

OPERABILITY—23%

INTRACRANIAL DAMAGE

And Complications in Fatal Cases

Location	Epidural Hem.	Subdural Hem.	Lacerat. of Brain.	Other Brain Lesions (meningitis) wet brain abscess Throm. jug. Vein.	Complicating injuries (Fract. and int. injuries.)
6 Vault	1	3	2	3	0
17 Base	5	6	8	2	5

Case 5. Record No. 230. Admitted November 22, 1915. H. C., male, age 6, fell, striking front of head against an iron pump. Patient entered hospital five days after accident. Laceration of the scalp over the right frontal eminence with slight amount of sero-purulent discharge. A bony fragment can be depressed and felt to give upon probing. X-ray showed a fracture at the right frontal eminence. Operation:—Depressed plate of bone measuring 2 cm. by 2 1/2 cm. was removed, edges rongueured, torn dura sutured, and plate of bone replaced. Wound healed perfectly when patient was discharged on December 18, 1915, cured.

Follow Up:—March 10, 1917. Patient at school. Reaction O.K., slight dep. in scar. No headache or epilepsy. 2nd Follow Up:—Failed to call.

Case 7. Record No. 524. Admitted January 28, 1916. E. A., male, age 4. Clothes pole fell from the second floor and struck boy on top of head. Examination showed a scalp wound at the junction of the lambdoid and sagittal sutures. Anterior to the lambdoid line of sutures and to the left was an area of bony depression. Definite crepitus was elicited. Both parietal bones felt to give on very slight manipulation. Spinal fluid slightly blood tinged. Operation immediately performed. Area of depression elevated and a small piece of bone removed. Dura not lacerated, not opened. Sagittal and coronal sutures found widely separated. Convalescence was uneventful. Patient left hospital well.

Follow Up:—March 4, 1917. School since September. Perf. well, memory and attention excellent. 2nd Follow Up:—May 1, 1924. Failed to call.

Case 8. Record No. 612. Admitted February 27, 1916. J. R. S., male, age 53. Was assaulted while walking. Fell backwards and struck head against the curb in the street. Comatose. Laceration of the scalp over the right occiput. No hemorrhage from ear or nose. Pulse 100, temperature 101, and respiration 18. No crepitus palpable over skull. Spinal fluid is slightly blood tinged. Ophthalmoscopic examination:—Right disc elevated 3 D. No signs of cerebral compression. Mental condition gradually cleared up and convalescence was uneventful. Discharged cured on March 17, 1916.

Follow Up:—March 10, 1917. Occ. headaches, P. M., no disturbance of vision. Referred to O. P. D., eye cl. 2nd Follow Up:—May 1, 1924. Failed to call.

Case 12. Record No. 1035. Admitted June 3, 1916. O. P., male, age 35, fell one-half flight of stairs; in coma. Temperature 100, pulse 86, respiration 26. Blood in sputum. Blood pressure: Systolic 125, diastolic 80. Operation:—Bilateral subtemporal decompression. Discharged eight days after operation against advice, apparently healed. Wounds apparently healed by primary union.

Follow Up:—May 1, 1924. Wrong address, failed to call.

Case 17. Record No. 1330. Admitted July 27, 1916. J. H., male, age 41. Kicked in head by horse, unconscious five hours. Large lacerated wound of scalp left parietal and occipital regions. Mouth drawn to right side, tongue protruding to left. Hemor-

rhage from left ear. Conscious on admission. Pulse 92. Moderate shock. X-ray No. 782783.

Follow Up:—March 10, 1917. Bells Palsy, imp. fol. electricity. Deaf left ear, no headaches, occ. move. and reaction normal. 2nd *Follow Up:*—May 1, 1924. Wrong address.

Case 18. Record No. 1371. Admitted August 5, 1916. F. W., male, age 9. Fell one story from fire escape, not rendered unconscious. Semi-comatose on admission. Depressed fracture temporal bone extending into parietal and frontal regions. Blood pressure: 100 systolic, 55 diastolic. Operation:—Elevation of temporal bone, subtemporal decompression. Discharged August 22, 1916. Wound healed by primary union. Convalescence uneventful. No bulging at site of decompression.

Follow Up:—March 19, 1916. School since September. Headaches in parietal region, worse at right. Pain in head during day, slight cut. strabismus both eyes, left more. Ocul. movements and reaction O.K. 2nd *Follow Up:*—May 1, 1924. Failed to call.

Case 19. Record No. 1372. Admitted August 5, 1916. J. T., child, female, fell from fire escape, one floor, unconscious one-half hour. Semi-conscious condition. Temperature 97, pulse 84. Blood pressure: systolic 98, diastolic 60. Fracture parietal bone (2). Bleeding from nose.

Follow Up:—May 1, 1924. Failed to call (wrong address).

Case 21. Record No. 1403. Admitted August 11, 1916. E. C., male, age 24, struck by trolley car while riding motor cycle. Bleeding from right ear. Blood in spinal fluid, unconscious. Temperature 100, pulse 106. Blood pressure: systolic 120, diastolic 45. Fracture middle fossa.

Follow Up:—May 1, 1924. Wrong address, failed to call.

Case 23. Record No. 1924. Admitted November 6, 1916. T. H., age 3, female. Fell six feet, unconscious. Fracture vault. Bloody spinal fluid. X-ray 1455-1457.

Follow Up:—May 1, 1924. Failed to call.

Case 26. Record No. 1981. Admitted November 11, 1916. T. S., male, age 24. Struck by auto November 5, dozed next day, headache and severe earache began November 9th. Pulse 60, temperature 99.6. Discharged November 26, 1916, cured. X-ray 1499-1501.

Follow Up:—May 1, 1924. Failed to call (wrong address).

Case 27. Record No. 2055. Admitted November 17, 1916. A. A., age 31, female. Blood pressure 140-80. Contusions right parietal region. X-ray 1535-1536.

Follow Up:—May 1, 1924. Failed to call (wrong address).

Case 28. Record No. 2207. Admitted December 4, 1916. H. I. W., male, age 9, struck down by auto. Temperature 99, pulse 84, unconscious. Right side of vault cracked pot sound, crepitus swelling with depression. Operation:—Elevation of fragment, replacement. Cured in fourteen days.

Follow Up:—Returned to school, frontal headaches, following application to studies, advised removal February 23 imp. 2nd *Follow Up:*—Failed to call.

Case 35. Record No. 3377. Admitted April 23, 1917. T. H., male, age 16. Fracture of the base. Bloody spinal fluid, pulse range 100 to 120. Hemianopsia right eye. Discharged May 16, 1917, cured.

Follow Up:—May 1, 1924. Failed to call (wrong address).

Case 37. Record No. 3744. Admitted June 4, 1917. J. G., male, age 22, was rendered unconscious the week before admission when he fell off the running board of a car. Recovered consciousness and vomited. Pulse 60, temperature 98. Bloody spinal fluid. Eye grounds moderate, congestion retinal vessels, no hemorrhage. Operation:—Exploratory craniotomy negative, right-sided subtemporal decompression. Convalescence uneventful, symptoms cleared up and patient was discharged on the 25th of June.

Follow Up:—April 15, 1924. No symptoms referring to head, eyes, ear, etc., since discharge from hospital.

Case 39. Record No. 3891. Admitted ——. G. S., male patient, age 8. Stuporous, aroused with difficulty, large hematoma left parietal region, subconjunctival hemorrhage right eye. Spinal fluid showed blood. Temperature 99, pulse 60. Uneventful recovery.

Follow Up:—April 15, 1924. Failed to call.

Case 41. Record No. 3912. Admitted June 16, 1917. R. C., male, age 7. Knocked down by automobile. Pulse 90, temperature 98. Swelling and ecchymosis of the right eye. Contusion of the frontal region, laceration of the left ear, spinal puncture showed bloody fluid. Child's condition improved and he was discharged July 1, 1917.

Follow Up:—April 15, 1924. Failed to call.

Case 43. Record No. 4648. Admitted August 20, 1917. R. T., male, age 3. Fell from a second story window. Subnormal temperature. Dilated pupils, cold extremities, internal strabismus of the left eye, contusions in the left temporal region. Bleeding from the right ear. Pulse range from 86 to 104. Patient recovered consciousness, and presented no symptoms. Discharged September 3, 1917.

Follow Up:—April 15, 1924. Failed to call.

Case 45. Record No. 5018. Admitted September 22, 1917. G. B., age 18, female. Fell from first story window. Bleeding from nose. Spinal puncture showed blood. Pulse 100, respiration 38, temperature 99.2. Operation:—Subtemporal decompression. Discharged November 17, 1917, excellent, rapid convalescence. Partial paralysis of the 3rd, 6th and 7th cranial nerves.

Follow Up:—April 15, 1924. Failed to call.

Abstracts of Fatal Cases of Fracture of the Skull

Case 1. Record No. 7. Admitted October 11, 1915. E. F., male, age 4, fell from the first floor window and struck head on sidewalk. Examination, lad in coma, dilatation of right pupil, deep stertorous breathing, pulse 128. There was an area of edema and abrasion over the left parietal and temporal bones, definite crepitus felt over this area. Pulse rose rapidly and patient died after a short interval.

Case 3. Record No. 45. Admitted October 29, 1915. M. M., female, age 51, was picked up in the street and brought to the hospital in coma. She died in a few minutes.

Autopsy:—Hematoma, right occipital region. Subdural hemorrhage in right hemisphere of brain with contusion. Fracture involved right occipital and temporal bones.

Case 6. Record No. 231. Admitted December 16, 1915. B. H., male, age 64, fell ten feet from a roof and struck left side of head; unconscious on admission. Temperature 96.4, pulse 88, respiration 20. Hemorrhage from left ear, nose and mouth. Laceration of scalp over parietal region. Distinct crepitus felt over left parietal and temporal bones. Eyes:—Marked subconjunctival hemorrhage on left side. Eye grounds showed no swelling. Spinal puncture:—Fluid contains much blood. Extremities:—Muscle power is good in each. No paralysis. Reflexes:—Superficial and deep, present and active on both sides. Diagnosis:—Fracture of the skull, laceration of left middle meningeal artery.

Result:—Pulse became rapid and weaker, blood pressure dropped to 100 systolic; temperature gradually arose and patient died December 18, 1915.

Pathological report:—Large epidural clot from middle meningeal hemorrhage on left side. There were blood clots in the pituitary and in the left orbital fossae. Fracture of skull involving the junction of the left parietal and temporal bones extending laterally through the sphenoid and sella turcica.

Case 9. Record No. 634. Admitted March 20, 1916. J. C., male, age 19, fell through an eight foot staging five days before admission. Patient was in a semi-delirious condition. Pupils were unequal, left dilated, react to light. Initial unconsciousness, ten minutes duration. Headache, weakness of left leg supervened and paralysis of left leg. Complete hemiplegia in the left side. Ophthalmoscopic examination:—Fundus O.S. 4 D swelling. Fundus O.D. 3 D swelling. Spinal fluid blood tinged. Pulse ranges from 55-92, latter after lumbar puncture. Patient died 17 hours after admission. Autopsy showed a fracture of the base of the skull, through the right temporal bone, extending forward through the pituitary fossa and to the parietal bone. Right middle meningeal artery lacerated. There was a large subdural clot present. Right temporal lobe badly lacerated.

Case 10. Record No. 718. Admitted April 6, 1916. F. R., male, age 52, brought in a comatose condition. Both pupils are equal and react well to light. Eye grounds show no swelling. Marked hemorrhage from right ear and nose. Spinal fluid contains much blood. Breathing is deep and stertorous. Spasticity of extremities. Pulse 108 and feeble. Systolic blood pressure 160, diastolic pressure 110. Temperature and pulse arose rapidly and patient died in 24 hours.

Autopsy showed a fracture of the base of the right side through the temporal bone extending transversely across the sphenoid and pituitary fossa. Left temporal lobe badly lacerated and contained blood clot. Middle meningeal not affected.

Case 11. Record No. 744. Admitted April 14, 1916. A. S., male, age 7, brought to hospital in coma, having been struck down by auto. Contusions left frontal region, cheek and eye. Blood pressure: systolic 148, diastolic 90. Right arm, leg, foot spastic, laceration of lip, bleeding from mouth. Fracture of left femur and clavicle. Pulse 110, temp. 99.4. Spinal fluid contained blood. Death followed shortly after.

Autopsy:—Fracture extended forward to supraorbital region of frontal bone.

Case 13. Record No. 1036. Admitted June 4, 1916. T. F., male, age 50. In profound shock and coma. Temperature 102, pulse 112. Died in 24 hours. Suffered from open fracture of the humerus, fracture of the ribs and internal injuries. 115 cc. clear spinal fluid removed. Blood pressure: 135 systolic, diastolic 80. Free hemorrhage from left ear.

Autopsy:—Fracture of occiput and left temporal bones of skull. Epidural clot over parietal region. Edema of brain. Rupture of kidney.

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Physical Examinations of Ninety-one Brooklyn Physicians

ANNA MANN RICHARDSON, M.D.,

COMMITTEE ON DISPENSARY DEVELOPMENT OF THE UNITED HOSPITAL FUND,

New York

The Kings County Medical Society of Brooklyn has always evinced a desire to keep abreast of the latest developments in the practice of medicine and health examinations have been no exception. Early this year the Public Health Committee turned for suggestions to the Committee on Dispensary Development of the United Hospital Fund, which for two years had been working in this field. The Society agreed with the Committee that the soundest method of demonstrating the technique of the examination to physicians is to examine the doctors themselves. This concept is based on the fact that the health examination differs from other types of medical examinations

thus far examined. Even this per cent can be reduced if we exclude those who phoned when unavoidably detained. This shows what a professionally active group can accomplish.

The Findings

It is always unsatisfactory to make comparisons as to physical conditions based on an initial examination because doctors differ in their interpretation of the seriousness of conditions found. Some tend to be optimistic, others pessimistic. The following groups are suggestive, classified on the basis of physical findings:

ANALYSIS OF VARIOUS GROUPS EXAMINED ACCORDING TO PER CENT FOUND WITH EACH DEGREE OF PHYSICAL IMPAIRMENT AND TREATMENT REQUIREMENTS

Group	Sex	Ages	Per Cent in Each Class						Total Per Cent	Number Examined
			1	2	3	4	5	6		
A. Postal employees, examined by Public Health Service	men	all	.5	1.2	26.2	34.1	23.8	14.2	100.	985
B. Commercial Insurance group	men	Av. 26	0	10.	52.	27.	9.	2.	100.	10,000
C. Industrial Insurance group	men	Av. 34	0	10.	41.	35.	9.	5.	100.	
D. Members Life Extension Institute	both	all	0	0	16.	25.	51.	8.	100.	5,000
E. Postal employees, examined by Life Ext. Inst.	men	all	0	0	5.	26.	57.	12.	100.	100
F. Members Kings County Medical Society	87 men 4 women	all	0	18.7	59.3	17.6	4.4	0	100.	91

mainly in the point of view of the doctor while making the examination and in giving advice, and in the attitude of the examinee in accepting and following suggestions. From this it follows that the doctor who submits to a personal examination not only accepts the principle of examinations of the supposedly well, but at the same time experiences the feelings of his future examinees.

The Committee on Dispensary Development, therefore, welcomed the opportunity offered them by the Kings County Medical Society to examine some of their members. Examining sessions were held in the small lecture room of the Kings County Library Building, especially equipped for the occasion with scales, screens and other necessary apparatus. Each doctor examined received a copy of the following report. As a by product, the Committee on Dispensary Development has already received many valuable and constructive criticisms from this delightfully sophisticated group of examinees.

Although physicians have the reputation of making poor patients, our experience would indicate that this reputation does not apply to them as victims of health examinations. As a group they were not only keenly interested, but also friendly and understanding in their acceptance of individual suggestions.

For those physicians who were examined, and for those physicians who kindly came in a consultant or advisory capacity, it is not necessary to describe the clinic set up nor to recount the routine of the examination. Suffice it to say that five different physicians served as examiners. The work was carried on by appointment. Seventeen per cent of the appointments were broken, which record is about three times better than has been attained by any group

Classification Basis

- Class 1. No physical defects.
- Class 2. Minor defects requiring observation or attention.
- Class 3. Moderate defects requiring hygienic correction or minor medical, dental, or surgical attention.
- Class 4. Moderate defects requiring medical supervision as well as hygienic correction.
- Class 5. Advanced physical impairment requiring systematic medical or surgical attention.
- Class 6. Serious physical defects requiring immediate surgical or medical attention.

In the accompanying tables are shown the distribution of examinees into their various classes, as a result of examinations of groups of postal employees, applicants of commercial and industrial insurance, and the members of the Kings County Medical Society.

CLASSIFICATION OF 91 PHYSICIANS, MEMBERS OF KINGS COUNTY MEDICAL SOCIETY, BROOKLYN, ACCORDING TO DEGREE OF PHYSICAL IMPAIRMENT AND TREATMENT REQUIREMENTS

Age group	Number of physicians in each class						Total Number	Per cent
	1	2	3	4	5	6		
36-50 years	0	8	26	2	1	0	37	34
Over 50 years	0	3	10	8	2	0	23	41
Total number	0	17	54	16	4	0	91	25
Per cent	0	19	59	18	4	0	100	
25-35 years	0	6	18	6	1	0	31	100

As would be expected, the Life Extension Institute group show the most serious condition, probably because of their use of the fear appeal in getting clients, and also to their policy of erring on the "safe" side, that is, giving symptoms or findings their dark-

est interpretation. A comparison of average ages in the two insurance groups gives us the sense of the inevitable. This can be somewhat alleviated, however, when we appreciate that the average age of the doctors who made the best showing was forty. So age need only be one element, and can, within limits, be a secondary consideration.

The health examinations as conducted in Brooklyn give the examining physicians two bases for judgment, i. e., the filled in questionnaire, stating habits and daily routine, as well as feelings towards life, and the examination itself, supplemented by incidental conversation. In practice the examining physician usually reads through the questionnaire making friendly inquiries to clarify special details, and then proceeds with the examination. Later, in making his plan for the examinee, the doctor naturally refers back to the habits of life described in the questionnaire to make his directions pertinent.

In this report the actual findings will be considered first, followed by a discussion of habits.

SUMMARY OF CONDITIONS FOUND IN EXAMINATIONS OF 91 PHYSICIANS

Condition	Number having each type of condition			Total
	Ages 25-35	Ages 36-50	Ages over 50	
Cardio-vascular conditions	20	19	11	50
Nose and throat defects.....	15	19	12	46
Postural and muscle defects.....	16	18	13	47
Dental defects	6	8	11	25*
Overweight	6	15	10	31
Ear conditions	6	9	10	25
Abdominal conditions	4	10	7	21
Eye defects	8	8	6	22
Skin conditions	12	2	3	17
Mental and nervous conditions.....	2	7	3	12
G. U. conditions.....	2	3	4	9
Lung conditions	0	3	5	8
Abnormal urinary findings.....	3	3	2	8
Gland conditions	1	1	0	2
No abnormal conditions.....	0	0	0	0
Number of physicians in group.....	31	37	23	91
Average number of different types of defects found per physician.....	3.3	3.4	4.2	3.6

The Physical Findings

Table I shows the number of doctors presenting deviations from the normal of the various types listed. The examination did not result in diagnoses, but rather served as a basis for suggested changes in habits or attitude, or refers to specialists or internists for determining the real significance of the findings. Discussion of these findings will illustrate the types of conclusions physicians can reach on the basis of this type of examination.

Cardio Vascular Conditions

Of the fifty doctors in this group, thirty-one had a systolic blood pressure of 110 or below. The lowest blood pressure was 94/60. Although these low blood pressures were chiefly found in physicians under thirty-five years of age, two men over fifty presented hypotension. The relation of the systolic to the diastolic was as 3—2 in about two-thirds of the cases. It was 5—4 in 3 cases, 5—2 in 5 cases, and 2—1 in 4 cases. A systolic blood pressure of between 141 to 160 was found in 8 men of whom 3 were over 50 years of age, and 2 under 35. One man had a systolic over 200.

Other conditions classified as cardio vascular were varicose veins, 7, cardiac hypertrophy or enlargement, 4, haemoglobin below 80, 4; one recognized

*Of these, 13 had caries or infected gums.

4 were receiving care at time of examination.

8 had crown teeth.

organic murmur and thirteen other cardiac conditions, as arrhythmia, function murmurs, accentuated, reduplicated or weakened sounds, as well as undue rapidity of the heart action. The significance of the hypotension offers an interesting field for speculation and eventually research.

Nose and Throat Defects

Of the forty-six men having nose and throat conditions, nineteen had diseased or enlarged tonsils, sixteen suffered from deflected or deviated septa, and the remaining twenty-three defects were rhinitis or pharyngitis or other acute or chronic congestive conditions. That this array of sixty-eight defects was not as serious as suggested is indicated from the fact that only ten of the physicians were recommended to undertake treatment from a specialist.

Postural and Muscle Defects

These stand rather high in the group with "protuberant abdomen" heading the list. This was especially marked in the men between 36 and 50 years of age, almost 1 in 3 being thus afflicted. The importance of this defect is brought out in the figuring of mortality ratio where it has been discovered that for every inch by which the abdominal girth exceeds the measurement of the expanded chest, the mortality ratio is increased a very definite per cent. At the time the examinations were made we were not conscious of this significance so did not take the necessary measurements. These physicians were judged by observation.

Only ten per cent of the doctors were regarded as having poor muscle tone; these were divided as to age so that below thirty-five there were 1 in 15, between thirty-six and fifty there were 1 in 7, and over fifty-one, 1 in 8. These figures are suggestive, as in the case of the protuberant abdomens, though they are only the expressed judgment of the examining physician. Actual standards of what is normal in the way of muscle tone for healthy men at various ages are not at present available.

Dental Defects

With the dental defects as with all the other defects, the question of personal bias asserts itself. One of the examining doctors believed all crown teeth a menace and the discovery of one such stimulated a dental refer. Excluding the eight men who were referred for this cause alone there were seventeen other men with dental caries or gum conditions of which four were under treatment at the time of the examination. Thus there were only thirteen or about fourteen per cent who were in any possible way negligent about their teeth. This unusually good showing may be partially accounted for by the fact brought out in the questionnaire that seventy-seven per cent of the doctors had regular times for going to their dentists, while only twenty-three per cent left it to chance necessity. This seventy-seven per cent was made up of thirty-four per cent who went once a year, twenty-eight per cent who visited their dentist semi-annually, seven per cent who called three times a year, three per cent who went quarterly, while the five per cent remaining had found biennial care adequate. The only figures in any way comparable are a group of professional and industrial men examined in the Cornell Health Clinic, among whom forty-four per cent were neglecting their teeth.

Overweight

Regarding overweight, it has been usual to regard persons as overweight who were fifteen or more pounds above the average for their height and age.

Recently the Metropolitan Life Insurance Company has found that the average weight is not the best weight judged in terms of mortality ratios. Below thirty years of age a certain amount of overweight is an asset, while as one passes above thirty it becomes an increasing menace. On the basis of these figures thirty-one of the ninety-one physicians were found to be overweight. Nine of these were only slightly overweight, while sixteen were moderately fat and six tipped the scales at a figure that would cause them to be refused life insurance on this ground alone. The ages of these six bad risks were thirty-six, forty-four, forty-five, forty-nine, fifty-one and fifty-two respectively. The thirty-six year old examinee frankly admitted that he had too good a cook. All of these men were active and carried their overweight well and all were very good sports in recognizing the advantages of reduction.

Ear Conditions

The ear conditions were mostly of a minor nature. Of the twenty-five doctors showing defects, eleven had cerumen so situated that the drum could not be seen. Five had defective hearing in both ears and seven were defective in one ear. Only six of the group were referred to an otologist.

Eye Defects

Eye defects were more serious in that twelve had markedly defective vision uncorrected, and five had incomplete correction. We judge this on the basis of the army rating which regarded 20/40 on the Snellen chart in either eye as "markedly defective." Curiously enough, the defective vision occurred in eight cases in the younger age group, seven in the group over fifty and only two cases in the group from thirty-six to fifty. Other eye conditions were photophobia, unequal pupils, ectropia, and muscle defects. Fifteen per cent of the doctors were referred to an ophthalmologist.

Abdominal Conditions

Under abdominal conditions are grouped a rather heterogeneous conglomeration of defects. There were twenty-five conditions found among twenty-one examinees as follows: relaxed abdominal ring, six; inguinal hernia, two; umbilical hernia, one; abdominal tenderness R. L. Q., three; general, one; ascites, one; liver palpable, one; hard and irregular, one; spleen palpable, one; hemorrhoids, five; and last but by no means least, constipation, three. This very good record for constipation stands out vividly in contrast to other groups examined. It suggests that doctors simply will not either neglect themselves or take medicine constantly.

Other Conditions

Acne heads the list of skin conditions with eczema a close second, all slight defects.

Five of the eleven G. U. conditions were varicocele and four of the ten lung findings were emphysema. The two gland conditions were one thyroid and one cervical adenitis. Albumen was found in three specimens of urine and a sugar reaction in five.

The mental and nervous conditions include increased or reduced knee jerks, areas of tactile anesthesia and tremor of the hands, as well as one case of "mental tension." Without implying that in this group many mental quirks exist, I do feel that I should frankly state that in the field of mental life the examination is least satisfactory. All suggestions for reducing this defect by changing the questionnaire or the technique will be welcome.

Personal Habits

To turn now from these physical findings, it is interesting to consider the habits of the doctors examined.

While most of the doctors appreciated the value of exercise, few were able to so adjust their obligations as to have time for the desired amount.

Over half left their exercise to chance—this was two out of three in the group under thirty-five; three out of five in the group between thirty-six and fifty, while half of the older group left their exercise to chance.

One in four of the entire group arranged for regular recreative exercise, while one in six was expert in some sport, indulging in it when possible or in season.

Only two, martyrs to the cause, admitted taking corrective exercises daily. The methods of exercise, however, were adequate in more than fifty per cent of the cases, so that either previous training or the chance activities of daily life served to maintain good physical tone. This is judged from the fact that only forty-five of the ninety-one physicians were urged to exercise.

As would be expected in the city, the characteristic forms of recreation were theatres, shows, music or radio—over sixty per cent of the doctors getting recreation in this way. Twenty-seven per cent enjoyed family and social life and social games, such as cards and billiards. Thirty-eight per cent combined their recreation and exercise in various sports and outdoor activities, while three in the younger group, and two between thirty-six and fifty, and four over fifty-one did not feel that they had any recreation.

In the suggested plans only nine men were felt to be in immediate need of rest or vacation, three of whom in the younger group did not have enough sleep, one from interruption and two from late social gatherings.

The question as to whether habits should be decided on the basis of practical experience or on the basis of research is pertinent at present. For instance, drinking water, which we are inclined to urge on our patients, is not a uniform habit among the doctors. One out of every three doctors reported drinking less than four glasses of water a day. Sixty-five per cent drank some straight milk every day.

Many people come to health examinations believing they will be forbidden all their pet indulgences, among which coffee stands out as a prince of offenders. Twenty-three per cent of the doctors drank no coffee, sixty-one per cent took one or two cups a day, while sixteen per cent confessed to consuming three or more cups each day. Tea is not medically popular for sixty-five per cent took none and the remaining number took it occasionally.

Thirty-five per cent of the group do not smoke, while thirty-three per cent smoked moderately or not more than ten cigarettes, or two cigars, or three pipes a day. The remaining thirty per cent smoked more than this, yet only six per cent of the group were felt to be smoking to excess judged by the health advice given. One physician raised his blood pressure from 130/95 to 160/110 by smoking a cigarette.

Cost of the Experiment

A statement of the cost of the experiment may give physicians an idea of the value of this type of service and help them to evaluate their time in ways to make

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The Influence of Saccharin On Secretion, Absorption and Kidney Elimination

Report of an Investigation of Certain Effects of Saccharin on Secretion, Digestion, Absorption and Kidney Elimination

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CHARLES L. KLENK, M.D., St. Louis,
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SCOTT HEUER, M.D., St. Louis,
HARRY G. BRISTOW, M.D., St. Louis,

In a court proceeding, instituted in the Federal Court at St. Louis in 1919, by the United States Government against the Monsanto Chemical Works of St. Louis, Missouri, manufacturers of saccharin, it was contended by the Government that the manufacturers were guilty under the Pure Food and Drugs Act of misbranding, because the label on their saccharin package contained the words "absolutely harmless." Expert testimony was presented by the Government to prove its contention that saccharin is not absolutely harmless.

On the other hand the manufacturers undertook to prove by a vast array of medical witnesses that saccharin had been known to and recognized by science for a number of years as harmless, that it had been used by the medical profession of the world throughout these years and that, for thirty years or more it had been in very general use by medical practitioners, without a single instance on record in which harm had come from its employment. Among the men assembled for both sides were internists and specialists in both medicine and surgery, chemists, physiologists and laboratory technicians.

More than three weeks was consumed in the presentation of the testimony, pro and con. At the conclusion of the trial, the jury, after long deliberation, remained disagreed and was discharged as "a hung jury."

Again, during the latter part of April this year, the Government brought identical suit against the Monsanto Chemical Works in the same Federal Court in St. Louis, the trial lasting for something more than a week, at the conclusion of which, the jury was once more disagreed and was discharged—"a hung jury."

Knowing that, with few exceptions, the medical profession is confirmed in the conviction that saccharin is harmless and will therefore be interested in an effort to prove it otherwise, it was decided by a group of men, who performed experiments proving certain phases of its harmlessness, to publish the results of their investigation.

It is proper to state by way of explanation that, among other witnesses, summoned to testify on behalf of the Government in its contention that saccharin is not absolutely harmless, was Dr. A. J. Carlson, Professor of Physiology, in Chicago University.

Based on his testimony, the attorneys for the Government prepared certain hypothetical questions, which were propounded to each of the witnesses for the Government and similarly propounded to each of the witnesses for the Monsanto Chemical Works. Without a single exception, none of the witnesses for the manufacturers were willing to accept the hypothetical question, based on Dr. Carlson's testimony. It is needless to state that these witnesses were men of high standing in the profession, qualified physicians of experience.

Their unwillingness to accept the hypothetical question was based first on the fact that, without exception, no single one of them was ready to believe that the deductions of Professor Carlson were correct. They objected to his entire series of experiments and to his method of procedure, insisting that the tests were not trustworthy

and that his conclusions were inconclusive. They contended that the technique he had pursued and the type of experiments he made and especially concentrations of saccharin used, would necessarily lead astray, that they did not run parallel to the process of digestion and absorption in the normal human being.

It is true that Professor Carlson's experiments on salivary and gastric digestion—"Appetite Gastric Juice and Gastric Juice, Quantity and Quality"—were performed on a man. However, this individual differs tremendously from the normal in that he suffered a total occlusion of his esophagus, the result of a burn, sustained during his infancy, when he swallowed a quantity of concentrated lye. It is necessary for him to chew his food, spit it out, thereafter passing it into his stomach through a fistulous opening, surgically made.

It was maintained by all of those men who opposed Professor Carlson's conclusions, that the digestive processes in such a subject differed from the normal, that deductions, made from experiments, performed on this man, could not parallel the sum total of observation made on humanity at large by a multitude of physicians during more than a quarter of a century and that conclusions arrived at after experimentation on this unique individual, would not be dependable by way of comparison with the "Effects of Saccharin on the Salivary and Gastric Secretion and Digestion of the Balance of Humankind."

Besides, in the instance of Professor Carlson's unusual case, it must be borne in mind, first, that he has a known aversion to saccharin as a sweetener and second, that, because he has been so long under Professor Carlson's observation, in his physiological laboratories, the results obtained by experimentation on him are likely to be influenced through his mental attitude. In addition, it has been said of this man that he is intensely neurotic. If this be true, it is another reason why psychic influences of all kinds would have a bearing on his secretions and digestive processes.

And yet, so positive and so persistent were the attorneys for the Government in their contention before the jury, that the Carlson experiments were wholly dependable and that his end results were therefore final and conclusive, it was determined by a group of five of the witnesses for the Chemical Works to perform certain experiments on normal, healthy male adults, in order to determine what effect, if any, saccharin might have (1) On Secretion and Digestion in the Mouth and in the Stomach, (2) On Intestinal Absorption and (3) On Kidney Elimination.

The experiments were undertaken and completed by the following group of physicians:

Dr. David L. Penney, Gastro-enterologist, St. Louis.
Dr. Charles L. Klenk, Physiological Chemist and Laboratory Diagnostician, St. Louis.
Dr. Scott Heuer, Clinician (Internist), St. Louis.
Dr. Harry G. Bristow, Physiological Chemist and Laboratory Diagnostician, Professor of Physiological Chemistry, St. Louis University Medical School.

Dr. Leon L. Solomon, Clinician (Internist), The Solomon Clinic and Hospital, Louisville.

In order to avoid error and to increase the efficiency of the personnel of the group, all chemical and physiological observations were made by Drs. Bristow and Klenk. Digestion measurements were conducted by Dr. Bristow in the presence of Dr. Heuer. X-Ray observations were made by Dr. Penney in the presence of Drs. Solomon, Heuer and Klenk.

All materials used were standard. Quantities of materials, ingested, including Ewald-Boas test meal, cane sugar, glucose, saccharin and water were accurately weighed and measured by Dr. Bristow.

Dr. Bristow assigned each test subject to his particular test and supervised alternate tests so that individuals, receiving sugar or glucose or an unsweetened meal, first, would receive the saccharin meal, second, and vice versa. The time limit between each test was supervised by Dr. Bristow and checked by several other members of the group. Dr. Solomon made separate check of the tests and kept the records of the entire procedure.

Method of Procedure

For the purpose of making the investigations, there was selected from Washington University Medical School of St. Louis and from St. Louis University Medical School of St. Louis, twelve junior and senior male medical students. A careful physical examination was made of each subject. This examination included the history of the individual, also family history. A record was made of the temperature, pulse, respiration and blood pressure. Physical examination was made of the thorax and of the abdomen.

As a result of these examinations the men were accepted as normal, healthy subjects. Their names and addresses follow:

- Subject No. 1—F. A. Harrison,
4933 Forest Park Boulevard.
2—Walter V. Campbell,
4933 Forest Park Boulevard.
3—Frank U. Glenn,
4549 Clayton Avenue.
4—Delly Lee Harlan,
4933 Forest Park Boulevard.
5—Louis Jorstad,
4933 Forest Park Boulevard.
6—R. W. Robinson,
4933 Forest Park Boulevard.
7—Vincent C. Molloy,
3501 Lafayette Avenue.
8—Chas. H. Dittman,
3501 Lafayette Avenue.
9—John C. Guenther,
3501 Lafayette Avenue.
10—E. F. Duffy,
3501 Lafayette Avenue.
11—E. W. Fitzgerald,
3501 Lafayette Avenue.
12—Bennett Lavery,
3501 Lafayette Avenue.
13—George E. Nesche,
4933 Forest Park Boulevard.

Subject No. 10, E. F. Duffy, was assigned to assist Dr. Bristow in the recording of certain phases of the experiments.

It must be borne in mind that the subjects were experienced men, having undergone innumerable times, similar experiments in their regular medical course of study.

There was no possibility of any psychic influence that might result from their unfamiliarity with the passage of the stomach tube or otherwise. The men were familiar with the chewing of a test meal, having on many previous occasions been required to "chew and spit" food so as to avoid any admixture of saliva with stomach contents.

To Dr. David L. Penney (gastro-enterologist) was entrusted the removal of stomach contents in each instance.

Time of Experiment—Instructions

The subjects for examination were selected Saturday, May 3, 1924, at 5:00 o'clock P. M. They were instructed as follows:

Each partook of an identical meal at 6:00 o'clock P. M., May 3d, thereafter abstaining from further food or drink until they reported for examination at 8:00 o'clock A. M., Sunday, May 4, 1924.

The place of examination was the offices of Dr. David L. Penney, Wall Building, corner of Vandeventer and Olive Streets, St. Louis.

The experiments, undertaken, proposed to determine questions bearing on the effect of saccharin, if any, on certain of the physiological processes in the normal human body, namely:

1. The digestive activity or digestive power of the salivary secretion.
2. The amount of appetite gastric juice:
 - (a) The free acid
 - (b) The total acidity of the appetite gastric juice
 - (c) The digestive activity of the appetite gastric juice as measured on coagulated egg albumen in a Mett tube.
3. The estimation and measurement of stomach secretion:
 - (a) The total quantity of stomach content
 - (b) The presence and amount of free and total acid
 - (c) The digestive activity of stomach enzymes as measured on coagulated albumen in a Mett tube.

These three determinations also show the continued quantity and quality of the appetite gastric juice up to the fifty minute period, when stomach contents were extracted, such tests being in contradistinction to the pure appetite gastric juice examinations. In other words, the above tests afford the complete appetite gastric secretion plus those secretions of the stomach, which are of physiological importance after the appetite gastric juice has ceased to be secreted.

4. Besides the experiments, above outlined, tests were undertaken to determine the matter of intestinal absorption and kidney elimination as either or both might be influenced by the presence of saccharin in the human body.

The men accepted for the tests were divided into groups and the tests conducted as follows:

Test No. 1. Salivary Digestion.

Subjects:

- Walter V. Campbell, known as Subject No. 2.
Vincent C. Molloy, " " " " 7.
E. W. Fitzgerald, " " " " 11.
Bennett Lavery, " " " " 12.

Procedure

Ewald-Boas test meal provided in each instance.

Directions: Chew meal; do not swallow and do not swallow saliva for fifteen minute period following.

The salivary digestion was measured on starch in Mett tube.

Details

Subject No. 2—First test meal sweetened with saccharin; second test meal sweetened with glucose.

Subject No. 7—First test meal sweetened with saccharin; second test meal sweetened with cane sugar.

Subject No. 11—First test meal sweetened with glucose; second test meal sweetened with saccharin.

Subject No. 12—First test meal sweetened with cane sugar; second test meal sweetened with saccharin.

The material was filtered and salivary digestion measured by placing the Mett tube, containing starch, in equal volumes of the filtrate.

The results of the experiment were as follows:

Subject No. 2—The average of four measurements of digestion with the first meal was 6/100 of an inch.

The average of four measurements of digestion with the second meal was 7/100 of an inch.

Subject No. 7—The average of four measurements of digestion with the first meal was 12/100 of an inch.

The average of four measurements of digestion with the second meal was 10/100 of an inch.

Subject No. 11—The average of four measurements of digestion with the first meal was 12/100 of an inch.

The average of four measurements of digestion with the second meal was 13/100 of an inch.

Subject No. 12—The average of four measurements of digestion with the first meal was 7/100 of an inch.

The average of four measurements of digestion with the second meal was 9/100 of an inch.

Summary

Three of these subjects had slightly greater total quantity of digestion with saccharin test meal than they did with cane sugar test meal or glucose test meal. One had slightly less digestion with saccharin than he did with glucose.

Conclusions

The presence of saccharin does not inhibit salivary digestion.

TEST No. 2.

Three subjects to determine the following factors concerning the appetite gastric juice:

- (a) Quantity
- (b) Free Acidity
- (c) Total Acidity
- (d) Digestion of Coagulated Egg Albumen in Mett Tube.

Two different meals were given to each one of the three subjects. The meal was chewed but not swallowed. Directions were given to prevent as far as possible admixture of the saliva with the stomach contents. The appetite gastric juice in each instance was withdrawn within a period of fifteen minutes or less by Dr. David L. Penney.

Details of the Test Meals

Subject No. 2—First test meal sweetened with saccharin; second test meal sweetened with glucose.

Subject No. 7—First test meal sweetened with saccharin; second test meal sweetened with cane sugar.

Subject No. 11—First test meal sweetened with glucose; second test meal sweetened with saccharin.

Results

Subject No. 2—With first test meal the total quantity of appetite gastric juice was 10 cc.

With second test meal the total quantity of appetite gastric juice was 6 cc.

Subject No. 7—With first test meal the total quantity of appetite gastric juice was 45 cc.

With second test meal the total quantity of appetite gastric juice was 75 cc.

Subject No. 11—With first test meal the total quantity of appetite gastric juice was 14 cc.

With second test meal the total quantity of appetite gastric juice was 15 cc.

Summary

The total quantity of appetite gastric juice was greater with saccharin in the case of two subjects and less with saccharin in the case of one.

Conclusion

Saccharin does not decrease total quantity of appetite gastric juice.

Results (Continued)

As to acidity:

Subject No. 2—Free acidity (test meal No. 1) 20.
" " (test meal No. 2) 11.

Subject No. 2—Total acidity— 30 (first meal).
" " 11½ (second meal).

Subject No. 7—Free acidity (test meal No. 1) 89.
" " (test meal No. 2) 115.

Total acidity— 99 (first meal).
" " 147 (second meal).

Subject No. 11—Free acidity (test meal No. 1) 30.
" " (test meal No. 2) 18.

Total acidity—40 (first meal).
" " 23 (second meal).

Summary and Conclusion

No significant difference in acidity (either in the free acid or in the total acidity) was shown, where saccharin was used.

Results (Continued)

Subject No. 2—The average of four measurements of digestion with first meal was 5/100 of an inch.

The average of four measurements of digestion with second meal was 4/100 of an inch.

Subject No. 7—The average of four measurements of digestion with first meal was 10/100 of an inch.

The average of four measurements of digestion with second meal was 13/100 of an inch.

Subject No. 11—The average of four measurements of digestion with first meal was 7/100 of an inch.

The average of four measurements of digestion with second meal was 9/100 of an inch.

Summary and Conclusion

No difference in the digestive action of the appetite gastric juice when saccharin is or is not used as a sweetener in the test meal.

TEST No. 3.

Six subjects were fed Ewald-Boas test meal; directions: "chew and swallow." In the test meal cane sugar, glucose, saccharin and unsweetened meals were alternated in the following manner:

Subjects:

F. A. Harrison, known as Subject No. 1.

Frank U. Glenn, " " " " 3.

Delly Lee Harlan, " " " " 4.

Chas. H. Dittman, " " " " 8.

John C. Guenther, " " " " 9.

George E. Nesche, " " " " 13.

Subject No. 1—First test meal sweetened with glucose; second test meal sweetened with saccharin.

Subject No. 3—First test meal sweetened with saccharin; second test meal sweetened with glucose.

Subject No. 4—First test meal sweetened with saccharin; second test meal sweetened with cane sugar.

Subject No. 8—First test meal *unsweetened*; second test meal sweetened with saccharin.

Subject No. 9—First test meal sweetened with cane sugar; second test meal sweetened with saccharin.

Subject No. 13—First test meal sweetened with cane sugar; second test meal sweetened with saccharin.

Sufficient periods of time up to fifteen hours were allowed to elapse between the two test meals. The contents of the stomach were withdrawn in every instance within fifty minutes after the taking of the test meal.

Examinations and tests were made in the following order:

- (a) As to total quantity of stomach content
- (b) As to free acidity

- (c) As to total acidity
(d) As to the digestion of egg albumen in Mett tube.

Results and Conclusions

As to total quantity:

Subject No. 1—First	test meal,	180 cc.
Second	" "	194 cc.
Subject No. 3—First	" "	170 cc.
Second	" "	90 cc.
Subject No. 4—First	" "	110 cc.
Second	" "	50 cc.
Subject No. 8—First	" "	125 cc.
Second	" "	78 cc.
Subject No. 9—First	" "	140 cc.
Second	" "	150 cc.
Subject No. 13—First	" "	30 cc.
Second	" "	100 cc.

Summary

Five subjects showed greater total quantity of stomach content with saccharin; one showed less with saccharin.

Conclusion

Saccharin does not inhibit the quantity of gastric secretion.

Results (Continued)

As to free and total acidity:

Two subjects showed less free and total acidity where saccharin was used.

Three subjects showed greater free and total acidity with saccharin.

One subject showed identical free and total acidity, whether saccharin or sugar was used.

Conclusion

Saccharin does not reduce the acid quality of gastric secretion.

Results (Continued)

As to the digestion of egg albumen in a Mett tube.

Subject No. 1—The average of four measurements of digestion with first meal was 10/100 of an inch.

The average of four measurements of digestion with second meal was 9/100 of an inch.

Subject No. 3—The average of four measurements of digestion with first meal was 20/100 of an inch.

The average of four measurements of digestion with second meal was 20/100 of an inch.

Subject No. 4—The average of four measurements of digestion with first meal was 19/100 of an inch.

The average of four measurements of digestion with second meal was 19/100 of an inch.

Subject No. 8—The average of four measurements of digestion with first meal was 17/100 of an inch.

The average of four measurements of digestion with second meal was 22/100 of an inch.

Subject No. 9—The average of four measurements of digestion with first meal was 9/100 of an inch.

The average of four measurements of digestion with second meal was 14/100 of an inch.

Subject No. 13—The average of four measurements of digestion with first meal was 12/100 of an inch.

The average of four measurements of digestion with second meal was 16/100 of an inch.

Summary

Three out of six subjects had a greater total digestion with saccharin.

One had less total digestion with saccharin.

Two had the same digestion, whether saccharin or sugar was used.

Conclusion

Saccharin does not reduce the digestive activity of the gastric juice.

TEST No. 4—Intestinal Absorption and Kidney Elimination With and Without Saccharin.

Subjects:

Louis Jorstad, known as Subject No. 5.

R. W. Robinson, " " " " " 6.

Procedure

A Lyon tube was introduced through the mouth, down through the stomach into the first portion of the small bowel (duodenum). In each subject the position of Einhorn bucket within the duodenum was ascertained by the fluoroscope. Through this tube was first introduced into the intestine a substance known as phenolsulphonophthalein, 1 cc. dissolved in 300 cc. water.

(NOTE: The chemical substance, phenolsulphonophthalein must not be confused with another chemical substance known as phenolphthalein. The former is a dye, possessed of no laxative property whatsoever. The latter, also a dye, is possessed of marked laxative property.)

In the case of the first subject investigated, the water introduced contained one grain of saccharin in first test; no saccharin in second test.

In the case of the second subject investigated, the water contained no saccharin in first test; one grain of saccharin in second test.

The total output of urine for each hour was collected in separate containers for three consecutive hours, following the introduction of the phenolsulphonophthalein into the intestine.

The amount of urine was measured for each period and the quantity of phenolsulphonophthalein excreted was also determined.

Results

Subject No. 5—First total amount of urine, 3 hours, 966 cc.; second total amount of urine, 3 hours, 925 cc.

Subject No. 6—First total amount of urine, 3 hours, 785 cc.; second total amount of urine, 3 hours, 840 cc.

The amount of phenolsulphonophthalein recovered in each case, as determined by the colorimeter, was identical, whether saccharin was used or not used.

Each of the two subjects, under identical circumstances, drank the same amount of fluid during the entire experiment.

Conclusion

Saccharin did not decrease the amount of phenolsulphonophthalein, absorbed through the intestine and eliminated through the kidney. Saccharin did not decrease amount of water, absorbed through the intestine and eliminated through the kidney.

Based on the above series of experiments, we submit the following as a résumé of our conclusions, concerning (1) the influence of saccharin on salivary and gastric secretion and digestion, (2) on intestinal absorption and (3) on kidney elimination:

- (1) Salivary secretion and salivary digestion are not inhibited.
- (2) The quantity of appetite gastric juice is not decreased.
- (3) The amount of free acid and the total acidity show no significant difference.
- (4) There is no difference in the digestive action of the appetite gastric juice.
- (5) Saccharin does not inhibit the quantity of gastric secretion.
- (6) Saccharin does not reduce the acid quality of the gastric secretion.
- (7) Saccharin does not reduce the digestive activity of the gastric juice.
- (8) Saccharin does not decrease absorption from the intestine.
- (9) Saccharin does not affect elimination from the kidney.

Cancer's Communicability

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The paper here presented is fourth in a consecutive series of articles appearing exclusively in THE MEDICAL TIMES.

If we could review the silent workings of the best practical minds in medicine as to cancer's origin and progress, we would unqualifiedly find them agreeing upon basis of either bacterial or protozoic cause.

Previous papers have, I think, disposed the more intelligent to thought that betwixt these two possible sources of origin, we must choose protozoa as most plausible scientifically. Else why the absence of successful serum or antitoxin treatment.

The immature student of bacteriology, seeking cause for cancer's genesis and ad instance discovering *subtilis* or *proteus vulgaris* will think he has found the hidden key to mystery's unravelment; promptly make a serum from his new found discovery, and as promptly herald it to the waiting wide, wide world. Such process gets us nowhere as some recent events justify.

But keeping our eye to the microscope, and observing these flitting things that come and go with a rapidity of motion their lesser brothers cannot command, we are forced to belief that cancer has its cause of being in the same domain where we place the various forms of plasmodiae and amoebae with which we are more familiar.

* * * * *

In previous articles I have definitely accused the protozoon *Trichomonas* of being cause for malignancy. Let us then turn to the subject of its communicability. Let us consider situ of prevalent malignancy in its major attitude.

Favorite sites are: in the female—breast and uterus; in the male—lip, tongue, stomach, rectum and pudendals.

We are temporarily leaving out of this hypothesis, existence of cancerous growth in other than major sites. We will concede for the time being, however, that situ of major manifestation can well be metastatic result of vagrancy to some more pregnable field from obscure point of first lesion, unnoticed because of its supposed benignity. This axiom can rule to remotest part.

But holding to more prevalent site and recognizing one of the favorite habitats of *Trichomonas* as peculiarly the female genital canal, we can righteously conjecture that sex normalities (we may call them that) have much to do with cancer's prevalence in its today's manifestations.

I do not purpose here to engage in any discussion of sex psychopathy for that is without the question. Nor do I wish to contradict the sometime opposed theorem that all healthy boys indulge in onanism.

I do wish to assert, however, that clashes of passion, whether intra—or extra-conjugal, have much to do with cancer's prevalence on basis of *Trichomonas* general vaginal residence.

Why cancer of the breast, so often in the unmarried female as well as the multipara? Consider, please, the erectility of the nipple, the avenues of ingress thereby afforded, passions incitation to excitement, and precedent allowable acts of fondling which may be indulged in without risk of social ostracism.

To descend in our scale of moral ethics, query might rise as to cancer of the tongue or lip or stomach.

Now I will freely admit to my colleagues that the subject, even under professional discussion is delicate in extremis, but hazarding this venture as to cancer's communicability, there will be many among the most educated and broad minded of the profession, who will recognize a train of events which may well explain things not heretofore explained as to cancer's prevalence.

Possession of and expression of sex fundamentals is as normal as humanity's food desire. Leading cloistered lives as most folks of reputation do in their home existence, judgment may be left out of discussion. Yet fact will make it sink into reader minds.

Long discourse might be engaged in as to frequency of uterine cancer. We might, safely avoiding the pitfall of infection from imperfectly healed erosions—result of child birth, build a picture of cancer's presence, readily occurrent years later as result of today's normal sex clash. If I were called to pass upon frequency of uterine cancer in an opinionative way—whether concerning the so-called virgin or the mother of five—I would say that in all likelihood, and regardless of fact that disease did not develop in noticeable form until years later, first opening to ever present *Trichomonas* seatment was caused by effort at abortion or more remotely, solitary satisfaction of sex desire on the part of the female involved.

In propounding this hypothesis, I again refer the reader to paper in the August MEDICAL TIMES wherein I counseled abstinence from discussion of the cancer subject outside professional circles. As we get deeper into our research that wisdom will become more apparent.

For the information of interested colleagues I put in this afterword. The preparation I have designated as AO in previous papers as deterrent to malignancy, is not commercialized. Its composition is so delicate that to insure stability I have not permitted its manufacture by others.

It is not proposed to withhold the formula from the profession at large. It is proposed, however, that the proven merit of many years of conscientious work shall not be jeopardized by a too-soon general exploitation.

Within present limited capacity, interested physicians will find their requirements satisfied.

H. T. C.

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The Thiosulphates

Foerster and Mommsen have investigated the reactions leading to the formation of thiosulfates. It is possible to prepare pure $\text{Na}_2\text{S}_2\text{O}_3$ by the interaction of NaHS and NaHSO_3 . The resulting solution contains 99-100 per cent of its sulphur in the form of thiosulfate. It is necessary to control the H-ion concentration when H_2S is passed into NaHSO_3 solution as otherwise the thiosulfate is contaminated with small amounts of sulphur and polythionates.—(Ber., 57, 258, 1924.)

Syphilis of the Bladder

Syphilitic involvement of the mucose of the bladder is more frequent than is generally reported, says Farago. Secondary alterations correspond somewhat to the secondary alterations of the buccal mucosa. The lesions generally heal under antisyphilitic treatment without leaving cicatrices. Tertiary bladder symptoms are those of a pronounced dysuria. The author reports two cases that cystoscopically showed pea-sized nodules surrounded by a red ring. The Wassermann reaction was three plus. Both dysuria and objective symptoms disappeared quickly after antisyphilitic treatment.—(Zeit. f. urol. Chir., 10 : 144.)

Crime and the Type of Mind in the Criminal*

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For the past twenty years I have been sitting in a criminal court where there have passed before me thousands of criminals, and I have had much more than the average chance to observe the type of mind in these abnormal beings who cause so much trouble in the world. I call them abnormal because the normal individual recognizes the restrictions which society places upon us all.

The urge to acquire, to possess, perhaps to accumulate, is commendable and wholesome so long as an equivalent in service is given. Herein lies the difference between the honest and the criminal mind.

The great bulk of our crime is committed in an effort to get something for nothing. Of course there is no such thing; but the delusion persists; hence, crime involving theft. Crimes of violence prompted by jealousy and revenge are in a different class, and while occurring frequently enough to attract a great deal of attention they are not what makes necessary the employment of an extensive constabulary. The crime that demands the best service of our police and courts is theft in its various forms. Coarseness and brutality are characteristics of the highwayman and the burglar, while the forger, the counterfeiter and the swindler are usually engaging in personality, persuasive in discussion and correct in deportment.

The criminal characteristics show themselves very early in life. They usually commence while the boy is yet in the grade school. A record of truancy is nearly always present. Small thefts from parents or school fellows, the breaking into candy and cigarette stores or vacant houses, the stealing of metal to sell for junk, the breaking open of automatic slot machines, anything that is handy and from which a small sum may be realized is the average starter for the future gun-man.

Our most dastardly crimes are committed by young men. It is very rare indeed that a criminal has his first experience in a criminal court after he is thirty years of age. In New York State an act committed by one under sixteen years of age, which would be a felony if committed by one over that age, is not classed as a crime, but the doer of it is known as a juvenile delinquent. Those who get into what we call the criminal courts are therefore more than sixteen years of age. Eighty per cent of those coming before us are between sixteen and thirty, and of those over thirty nearly all have been connected with crime before and a very large percentage of them have already been before the Children's Courts as juvenile delinquents of one kind or another. They are backward in school, slow to pick up a trade or useful occupation, incapable of holding a job where thought is necessary and lazy about doing hard work. They become useless in employment and a burden at home.

To cover up disclosing that they have been discharged from work they try to get the money which they are expected to take home Saturday night through some crooked means. Failing to get it they fail to go home, sleeping in hallways and moving vans or wherever chance gives them shelter. After

a while they develop a certain kind of cleverness in finding weak fastenings on doors and windows and ways of getting past watchmen. Some junkman or pawnbroker or second-hand dealer furnishes a market and your burglar or thief is made. He has arrived, and when he arrives he usually arrives to stay.

By the time he is twenty we frequently find that he has been to the Truant School, the Protectory, the City Reformatory, Elmira Reformatory and Sing Sing Prison. Crime becomes a trade and getting away with the goods becomes a game.

A few weeks ago a man before me, seventy-three years of age, admitted being in thirty-nine prisons and to having served in them forty-three years. He deliberately chose crime as a profession and pursued his calling as deliberately as though it had been a useful occupation. His is not an isolated case. The only difference between him and the ordinary crook is that he lasted longer than most of them do.

The type which was a horse thief is now the automobile thief, and despite the vigilance of our police there is a daily average of twenty automobiles stolen in New York City alone.

The type which murders through jealousy or revenge is very different from the one who murders in the commission of a robbery or other crime. A visitor to one of our prisons who is a keen observer can almost tell at a glance the general character of the crime which took the prisoner where he is confined. The prisoner who has the bearing of a student, a well shaped head with keen and alert eye, has usually committed a crime involving a fraud or deceit, while the heavy featured, low browed type, is quite likely to have employed coarser if not indeed brutal methods to accomplish his crime.

Criminals are quite likely to specialize, although we sometimes find the same criminal changing from one class of crime to another. Each specialist looks with favor upon others of the same branch of the profession and with great disfavor upon those who commit other classes of crime.

The highwayman characterizes the pick-pocket as a sneak, a slippery, slimy, snaky being; and in that he is right. But, he claims for himself great bravery; and in this he is wrong. The highwayman never gives his victim an equal chance. An armed robber takes his unarmed victim by surprise and forces him to hold up his hands while another armed robber takes the property they seek. The victim is never given a fighting chance.

All criminals are cowards at heart. Anyone is a coward who tries to force that which is palpably wrong. Much has been written and many views have been expressed as to what can be done to minimize the number of crimes committed. No one expects to see the time when no crime is committed, when prosecutors and criminal courts will be entirely idle, but we all hope to see evil-doing materially decreased, that a greater degree of safety may be afforded our persons and our property.

Too much sympathy is frequently given to criminals and too little to the victim. Take as an instance of this the recent Diamond case where the

*Presented before the Society of Medical Jurisprudence at the New York Academy of Medicine on April 14, 1924.

bank messengers were shot down without a chance to save or defend themselves. I read in the papers many expressions of sympathy for the Diamonds and their companions and their families. Everybody seemed to forget that the men who were shot down were taken from their families without warning. These honest men had probably been good to their families while the criminal is rarely a comfort to those about him.

To my mind the greatest deterrent to crime is quick trial and salutary punishment of those guilty.

To keep the coming generation away from the desire to commit crime is quite another matter. The only agencies we have are our churches and our schools, our Boy Scouts, our Y. M. C. A.'s and kindred institutions. Of all these, religious training and church and Sunday school surroundings are most valuable. Our schools should have added to the required 'studies' a 'periodical' reference to the 'text' "Thou shalt not steal." Among the questions required to be answered by a prisoner before sentence is, "What is your religion?" He answers "Protestant" or "Catholic" or "Jew," as the case may be; but in reality he is none of these. He has wandered away from the church or synagogue and is quite certain to have abandoned the religion of his parents.

It was stated a few days ago by Mr. Justice Cropsey, a thoughtful student of boys and the needs of young men, that ninety per cent of those in New York City under twenty years of age are entirely without religious training or example. It is from this ninety per cent that our criminals are recruited.

There are many young men who are caught in their first crime, who are turned from evil to usefulness and that without penal treatment. The suspended sentence has accomplished a great deal for boys and young men. I am not of those who think that everybody may get caught in one crime and suffer no penalty. But, in certain rare and unusual cases society can be assured of its needed protection and the wrong doer saved at the same time.

It has been my experience that nine out of ten of those released make good and do not get into crime again. The chief criterion I try to apply in these cases is "Is the prisoner penitent for his crime or merely sorry because he is caught?" For him who is only sorry because he is caught there is not much chance, but for him who fully realizes that the undetected wrong is as bad as the detected one, he is quite sure to live down the odium and disgrace of his wrong and reestablish himself in the confidence of those about him.

Physical and Mental Make-Up of Criminals

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As to the theory of the born criminal, Lombroso's conception of this grows out of his anatomical and physiological researches. He claims that he found certain malformations of the skeleton and of the viscera, and several abnormalities in the physiological processes usually prevalent among the criminals he examined. His theory has caused considerable discussion, criticism and difference of opinion. It is obvious, I think, to all of us, that there is no such thing as a born criminal in the liberal sense of the term.

It was estimated that in 1922 there were 500,000 persons who passed through the corrective and penal institutions of the United States, and that 200,000 boys and girls under the age of 18 were arrested for some form of delinquency. This calls to your attention the greatness of the problem of crime that we have to consider.

We have in New York State about 5,000 felons in the four state's prisons, and 70 per cent of all those sentenced in the State for felony are received at Sing Sing Prison. Last year we received 900 new prisoners, and before they arrived they were engaged in 181 different occupations. The general consensus of opinion is that most of the men who are sent to prison were working as laborers or manual workers on the outside. It is interesting to note that among the number received last year we found

24 auto mechanics	26 firemen	21 tailors
33 barbers	14 longshoremen	3 lawyers
11 bakers	11 machinists	1 policeman
16 bookkeepers	11 musicians	2 bankers
20 carpenters	103 laborers	1 poet
78 chauffeurs	27 painters	2 actors
43 clerks	11 plumbers	1 advance agent
27 cooks	12 porters	25 waiters
17 electricians	29 salesmen	1 doctor
	11 shoemakers	

23 were college educated, 80 high school graduates, 496 had grammar school educations, 99 could not read or write and 26 gave a history of no schooling, most of these latter being foreign born.

There were more single men than married, more employed at the time of arrest than were idle; 529 were abstainers and 369 were moderate drinkers; 665 were sentenced upon their own confessions of guilt and 232 were found guilty upon trial by jury; 605 were native born, 94 were naturalized citizens and 198 were aliens.

As to age, we receive men as young as 16 years and as far advanced in years as they may be when they commit an offense. 16 per cent are under 21, 60 per cent under 30, and the average age is about 24 years.

You can see by this that the men confined in Sing Sing Prison are very much like you and me as far as birth, education, habits and occupation are concerned.

I have had the opportunity to study very carefully about 12,000 men who have been caught and sent to prison (notice I say "caught"), and we study the man very carefully, taking a history of his family, personal and medical life, his vocational and criminal record; in fact, we try to trace every man from his grandparents down to the moment he arrives in the institution. He is given a complete physical examination, his eyes are refracted, kidneys and blood examined, and if there is any indication of a condition requiring surgical or medical interference the matter is immediately attended to. A psychological and psychometric test is also made, and if there is suspicion of a mental disturbance a psychiatric examination is given the subject.

One interested in the subject of penology would naturally be interested in finding out whether there

was present a physical condition that might be the cause of delinquency. I am frank to admit that my experience in the Medical Department of Sing Sing Prison has convinced me that there is no such thing as a criminal physique, and that we shall have to look in some other place for the causes of delinquency. It cannot be attributed to physical conditions. I do believe, however, that there are some physical defects that may be indirectly the cause of a man going wrong.

I am impressed more and more every day by the fact that the treatment of the criminal is a medical one, and that the only hope of success lies in a careful, thorough and systematic study of each individual case and not by a haphazard, slipshod examination. It has been our custom for some time past to make a careful physical examination of every inmate upon admission, and wherever we find an inmate suffering from any physical disability, which may be corrected by surgical interference, the fact is noted on his chart and at the earliest possible moment the condition is corrected.

As I have stated above and although I have not as yet seen the inmate who might be noted as having a general criminal physique, I do believe that there are certain physical conditions, peculiarities and ailments which have a very direct bearing on the tendency to commit crime, and these should be corrected if possible not only to improve the inmate's health but so that they will not stand in the way of his social success. It was my privilege during the year 1917 to examine in the neighborhood of 1,000 men who volunteered for service in the United States Navy; these men came from various parts of Westchester County and I am very frank to admit that taking our charts for 1,000 men who were admitted to Sing Sing Prison in the same period of time the physical condition of the men admitted to prison would compare favorably with the physical condition of the men I examined for service in the Navy of the United States.

From the figures that I am going to give you of our findings in the cases of 1,000 new admissions to the prison, the percentage that I would reject on account of physical disability, were it possible for these men to go into the service, would be no greater than the percentage it would be necessary to reject from among the same number applying for enlistment in either the Navy or the Army.

Taking the examinations for 1,000 consecutive admissions, we found that 45 per cent of the men had defective vision, of which more than 25 per cent were corrected with glasses; 24 per cent had teeth in good condition and the balance in either fair or poor condition; 21 per cent had deviated septums; 5 per cent had some circulatory disturbance and 60 per cent either had gonorrhea at the time of admission or gave a history of it. The percentage suffering from active syphilis or giving a history of it was between 19 per cent and 20 per cent.

I believe that physical conditions concerned with the causation of delinquent tendencies could be divided into those which cause weakness and those which cause irritation.

First—Ocular ailments. During the past year we have made a careful examination of the eyes of the inmates upon their entering prison, and believe that in at least ten to fifteen per cent of the cases it could be regarded as the delinquency factor. We all realize that eye strain or defective vision would natural-

ly lead to irritability and headaches and have their influence on education and other interests.

Second—Teeth. We all realize that carious teeth are a menace to one's general health and stand in the way of social achievements. The sufferer is unable to properly masticate and there is a constant absorption into the systems of poisons due to decay.

Third—Syphilis. 20 per cent of our inmates are positive to a Wassermann reaction. How far this disease plays a part in causing delinquency is a question to be studied.

Fourth—Epilepsy. Epilepsy has always been considered a causative factor in crime, particularly the crime of assault, yet our admissions with this condition are less than 1 per cent.

At the present time one of the great causes of men coming to prison is the drug habit, and heroin is the drug used in 96 per cent of the cases. During the past few years the number of those admitted to prison who are suffering from this addiction is increasing tremendously. It has been estimated that in the United States there are probably more than 1,500,000 drug addicts. It is estimated that 2,000 tons of opium is produced annually in the world, whereas legitimate medical and scientific needs would not require more than 75 tons. Heroin is the drug more likely to be used by the young and it is pre-eminently the drug used by a criminal. It inflates the personality, and he becomes reckless. He loses his sense of responsibility in respect to the law and his fellow men. He is stimulated to commit crime that he never would have committed if he were not under its influence. A large percentage of those who have come to us have to commit crime in order to get the funds to satisfy his craving.

Prior to 1919 for a period of six years we received an average of 13 drug addicts per year. In 1917 only four were admitted to prison. In 1920 the number increased 100 per cent over the average for the years prior to 1919. In 1921 it increased 500 per cent and in 1922 it increased 900 per cent. So to-day one out of every 11 admitted to Sing Sing Prison is suffering from the drug habit. 99 per cent buy it from drug peddlers and less than 1 per cent from the physician or druggist. Notwithstanding the fact that addicts have spent many years in prison without an opportunity to use drugs, over 50 per cent of them take to the habit immediately upon leaving; this shows the tremendous depreciation in their physical and mental makeup caused by its use.

Since I was invited to speak at this meeting tonight I have been in Washington, where I was invited by the chairman of the Committee on Foreign Affairs to speak on a bill which is to be presented to Congress to suppress the manufacture of heroin in this country. At Geneva last May it was decided to ask the 57 nations of the earth to discontinue the manufacture of this drug.

Surgeon General Blue brought out the fact that less than 5 per cent of the physicians of the United States prescribe heroin, and the Public Health Service in 1919 returned to Washington all the heroin in their depots, and last year the Army recalled all they had in the post and the Navy have called in all their heroin. I feel very keenly on this drug problem as prior to 1919 it was of no importance in connection with our prisons but to-day it is one of the biggest problems we have to confront. Our prisoners are examined thoroughly when they come in, and after they have received the visit from their families

we have to examine them again to prevent the drugs being brought in.

During my studies of the mental condition of inmates I have been trying to differentiate between those mentally deficient and those mentally retarded. This is quite important, for in the case of the mentally retarded, we might consider him an institutional patient, and if a thorough physical examination were made and the disabilities corrected, the mental condition of the inmate would improve. This shows that we must not be satisfied with just making a psychometric measurement alone, no matter how skilled we may be in those tests. The only hope of improvement we have is in the mentally retarded group, and it is my experience that almost 50 per cent of the so-called mental defectives come under this classification. There are a great many causes of mental retardation, a number of which I spoke about in a previous communication. I will speak briefly of a few of the most common causes. They are syphilis, defective eye sight and teeth, diseases of the tonsils and adenoids, valvular heart lesions, ozena, defective hearing, anemia, bad condition of elimination and epilepsy.

It is generally believed that about 75 per cent of the cases of feeble mindedness is due to heredity, which might be due to arrest of development, injury or disease of the protoplasm. In these cases the brain grows to a certain stage and then its growth is arrested. The amount of inherited defect is very important in these times when our mode of living is so complex. Years ago the lower grade of feeble minded were better able to get along than now. The other causes are probably toxic or traumatic, or due to defect by deprivation. As to the toxic causes, we might give scarlet fever, meningitis, syphilis, alcohol and narcotics in the parents, another factor may be traumatic injury to the mother or child at birth, as by the use of instruments, a fall, or injury to the head of the child. Another important cause is by the loss of some of the sense organs as deafness or blindness which interferes with communicating with the outside world.

There is another presumed cause given for mental deficiency and mental retardation, and that is defect of the endocrine glands and lately a great deal of study and research work is being done to see what, if any, the effect of the endocrine or ductless glands have on the feeble minded. Raider found in a study of 100 cases of feeble mindedness that had come to autopsy, that 21 per cent show very marked glandular involvement.

Those who have been diagnosed as mental defectives and have a record of several convictions are, on the recommendation of the prison physician, committed to Napanoch, an institution created by the State of New York for the treatment of mental defectives. Here they are taught various trades and if it is found that they may be returned to society they are paroled by the superintendent of that institution. If, on the other hand, it is believed that they should have institutional care, they are kept until their maximum sentence has expired and then may be recommitted by the Court of Record of that country for an indefinite time. This is, as far as I know, the only state in the Union that has made provision for mental defectives.

We do a psychometric test on all those committed to prison and, having done that same work in the Navy, I am satisfied that the mental condition of the men in Sing Sing compares favorably with that

of men outside of prison or who occupy like position. To satisfy myself further, I wrote to the Secretary of War and asked him for the records of the average intelligence of men in the Army and learned that during the draft of white men it had been found to be 13 years and 6 months. That is the average mental intelligence of the white men incarcerated in Sing Sing.

The influence of insanity on crime has always been recognized and it has been our experience at Sing Sing Prison that the greatest number of those who become mentally disturbed generally do so at or near the end of their term in prison, which may be due to the fact that the prisoner is worried over his ability to adjust himself to the situation that he has to face upon his release and the reaction of society towards him. A surprisingly large number of the men transferred from Sing Sing to Dannemora State Hospital are those who I believe were insane at the time they were sentenced by the Court. In other words, during the past ten years there have been admitted to Sing Sing Prison 71 men who were, soon after their admission and study, transferred to Dannemora State Hospital.

Some forms of insanity influence criminals to commit various characters of crimes. Dementia praecox unfits a man for a useful career. He is incapable of holding a position and is weak in the face of temptation and consequently he is likely to be led into a career of crime. He frequently acquires bad sex habits and may drink incessantly. Senile dementia sometimes leads aged persons, especially old men, to petty offenses as stealing, but more especially sexual offenses, such as exhibitionism, and sometimes even rape. Dementia at all periods of life may and sometimes does lead to crime, but it has its effect most frequently in the young. Healy says that not more than 25 cases and probably less than that number of 1,000 young repeated offenders showed symptoms of dementia praecox.

At the American Prison Congress held in Boston last September a judge of that city said that in the course of the administration of the criminal law no one knew less about the man to be sentenced than did the judge himself when he gave the sentence.

This is true because so many prisoners take a plea of guilty and are sentenced on that plea. I told Judge Humphreys to-night that in the last three weeks we had a man 63 years of age sentenced to Sing Sing for two years who told the judge that he had only committed two previous minor offenses. On questioning him we found he had been in prison eight times for burglarly and had spent 23 years in insane asylums; he had started his career the year before I was born in 1876. He was transferred to Dannemora Hospital for the Insane.

The result of such a lack of knowledge regarding the prisoner often causes glaring inequalities of sentence. In New York State we have over 180 judges sending men to State Prisons, and each one of them of course has his own idea of what a proper sentence should be.

I am one of those who believe that men are frequently sent to prison who might better be put under strict probation in the interests of society and the public welfare. An example of the good work which has been accomplished in this respect is given by Judge Bleakly, of Westchester County, who has placed on probation some 286 offenders and of these 228 have made good. The suspended sentence on

parole often avoids the breaking up of the family, and in the last analysis it is the innocent ones in the offender's family who suffer the most.

As stated above, in view of the fact that so many men, in fact, four out of the six men who were transferred to Dannemora State Hospital during the past six months were undoubtedly insane when they committed their crimes, is conclusive proof to my mind that there should be attached to every criminal court during its sessions a psychiatrist, particularly one who is familiar with criminal psychiatry, to see that those who are suffering from mental upsets are sent, for instance, to the Matteawan Hospital for treatment and not to Sing Sing Prison for punishment because it is recognized by society that a person of unsound mind is not responsible for his conduct.

We have at Sing Sing a new hospital which has been built by the State and which will make it possible for a broader study of the mental and physical makeup of the men sentenced to Sing Sing than is possible at the present time. We perform in the neighborhood of 150 major operations a year and have a continuous propulation in the hospital of 60 and the medical staff are without the services of a trained civilian nurse and have to accept the services of men who are confined in the prison who are always willing but untrained. This condition has been known to the Prison Department and they have tried in every way to get the Legislature to provide at least one or two civilian nurses but their efforts have been futile. It may be that the medical profession might help in this respect.

I am prompted to speak on the question propounded by Judge Humphreys, how can we lessen the crime of the future? In prison we deal with individuals, and after asking every man what caused him to commit the crime for which he was sentenced and making a note of his answer, and after noting his history carefully, a number of significant facts accumulate.

I have come to the conclusion that one way to lessen crime in the future is to pay a little more attention to our own children. I am reminded of an experience I had in New York a few years ago. I was invited to take luncheon at the Ritz-Carlton with a wealthy man and his wife who had expressed a desire to do something for the men in prison and I was asked to offer suggestions. During our conversation their little daughter who had been away all fall at boarding school buoyantly approached her mother and asked a question. The mother referred her to a governess and the child, her feelings wounded, went away. Another child approached the mother a few moments later and the same experience was repeated. At the conclusion of the luncheon the mother, commenting on my association with the men, asked me in what way she could help them. I replied that there are hundreds of men in prison because their parents were not interested in them, and advised her to devote some attention to her two lovely children and leave the matter of assistance to the convicts to those who had no such responsibility.

I speak advisedly. I would not retire at night while my child was away from home nor until I had talked over the events of the evening on her return; if I were too tired one night she might not bring her confidences to me the next time.

Judge Humphreys suggested that another way is to teach honesty in our schools. I believe we can lessen crime if we deport the alien criminals who constitute 25 per cent of our prison population. Why

should they not be deported after they finish their term in prison? The Immigration Law says that a man after being here five years cannot be deported even if he commits a crime. As a matter of fact if a man commits a crime after being here ten years he should be punished more than the one who has been here for five years. The longer he has enjoyed our hospitality the more he should appreciate the laws of our country. We have 11,000 alien insane in New York State hospitals whom we are supporting. If all alien criminals were deported, aliens would think twice before committing a crime. We could certainly lessen crime by preventing criminals coming into our country by examining all immigrants at the port of debarkation and refusing to receive those without a clean bill of health.

Judge Humphreys referred to boy and girl scouts. They are excellent organizations for the youth of our country. Each one has taken a pledge to do a good turn every day, and the out door life they lead, the hikes they take are outlets for their energy. In St. Louis there were 1,400 boys between the ages of 7 and 17 brought to court for various forms of delinquency, in one year, and there was not a boy scout among them.

Another way of lessening crime is to give the man a chance after he leaves prison. Few realize what a hardship he must endure to meet the requirements of life with his handicap. Let us give him a square deal.

I wish to acknowledge my appreciation of the services of Drs. Terry M. Townsend, Arthur Palmer, Harold Hays, H. Robertson Skeel, David H. M. Gillespie, William Sharpe and others of this Academy; they have given much of their time as visiting consultants.

Discussion

Joseph A. Faurot, Deputy Commissioner of Police: All police departments have, during the past few years, been putting forth their best efforts in order that they might meet, and if possible, overcome the abnormal conditions that have confronted them regarding crime. The primary object of the police is the prevention of crime, and the next, that of detection of offenders. To these ends, all efforts of the police must be directed.

Crime today is not just by chance; it is highly organized and directed with extraordinary cunning; criminals are more resourceful and desperate, aided as they are by modern inventions capable of being applied to criminal indulgences. The press, and many learned men have expressed their views as to the cause of crime, and such views have been varied indeed.

With regard to the causes of crime, there are a number of subjects, which would be to our advantage to study.

Has climatic condition any influence upon crime? My own opinion is that it has not, because similar crime conditions exist in sections of the country having opposite climatic conditions.

With regard to city life vs. country life, articles and sermons have been published setting forth the dangers awaiting the new arrival from the country to the city. It is true there is danger for those who are weak and easily led, but this danger may also exist in the rural districts. Many go to the cities because of the entertainment and life it affords. As to residence in either city or country having a direct bearing on any class of crime is a question for debate.

In many factories and stores, young men and women work side by side, and unless there is some steady influence, grave consequences may result. Persons employed in institutions where large sums of money are handled in a careless manner, might yield to temptation. Persons in some occupations sometimes claim they are poorly paid considering the responsibility attached to their positions; they must dress well and mix with proper society. There is no denying the fact that one's occupation may have more or less to do with causing crime.

The effect of intoxicating liquor is one cause of crime. It is a fact that the purchase of liquor depletes the earning power of the drinker and consequently affects the support of the home; and that it deranges the mind of the drinker, causing him to commit assaults, etc. The delinquency of children, who become

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Pyuria

Discussed from a Practical Standpoint

JOSEPH HAROLD FRIEDMAN, M.D.,

ASSISTANT ATTENDING UROLOGIST, BROAD STREET HOSPITAL,

New York.

The presence of pus in the urine is termed pyuria and usually indicates suppuration along the genito-urinary tract. This is often overlooked by both the patient and the physician in serious conditions, unless the patient's attention is called to his bladder by symptoms of frequent urination or pain.

The source of pus may be from any point along the genito-urinary tract; and only by systematic examination is it possible to determine whence it originates. Pus may originate from the balano preputial sac, Urethra anterior and posterior, bladder, kidney or in women the vagina.

Examination of the patient: The prepuce should be stripped back to determine the presence of a balano-posthitis or venereal ulcer under the prepuce, and the urethra milked to cause a drop of pus to issue from the meatus. Smears of the urethral discharge should be examined microscopically for gonococci or other bacteria. The patient is then requested to pass his urine in two glasses and retain a little in his bladder; if the first glass is cloudy and the second class is clear, it denotes that the urethritis is confined to the anterior urethra and that the posterior urethra is unaffected; if both glasses are cloudy, it indicates that the posterior urethra is affected as well as the anterior urethra and that the pus has made its way back from the posterior urethra into the bladder, contaminating and rendering the urine which is contained in the bladder turbid.

The next step in the examination consists in the palpation of the prostate and seminal vesicles through the rectum. The patient is then told to pass the remainder of his urine which has been retained in the bladder, and this is known as the expression urine. As the expression urine passes through the posterior urethra, it washes out the secretions which have been expressed by the examining finger from the prostate and seminal vesicles, and these appear in the expression urine as turbid flakes; comma shaped hooks or as mere cloudiness of the urine.

The urethra should then be explored with a bulbous bougie or endoscope. With a flexible bulbous bougie, which is a very sensitive instrument, the presence of strictures can readily be diagnosed. The endoscope discloses infiltrations, hard or soft erosions and the presence of Morganis crypts in the anterior urethra; and in the posterior urethra the presence of congestion or disease of the colliculus.

The size, consistency and shape of the prostate can be determined by rectal touch, but in many cases of gonorrheal inflammation the most experienced finger fails to remark any decided change, and it is only by microscopical examination of the expressed secretion as it issues from the meatus, or as it is obtained from the expression urine; that the presence of a gonorrheal inflammation can be determined.

A marked tuberculosis of the prostate is usually denoted by an increase in size and density; a modular feeling scattered throughout the substance. Calculus imbedded in the prostate is a rare condition, but exists. Senile hypertrophy of the prostate is usually not difficult to feel; it bulges into the rectum and the upper margin may be within reach of the examining finger, or it may extend so far up as to be out of reach. A suspicion of car-

cinoma of the prostate should at once be aroused by a feeling of extreme hardness in one or both lobes and by a feeling of fixation of the prostate in the pelvis. Inflammation within the seminal vesicles and in the surrounding cellular tissues may be due to infection with the gonococcus or other organisms, or to tuberculosis; and a differentiation is not always possible by palpation; although a feeling of extreme hardness accompanied by a nodular condition in and around the vesicles should make one suspicious of tuberculosis.

To confirm a diagnosis of gonorrheal or simple vesiculitis the vesicles could be palpated and the secretion expressed from them examined with a microscope. This will show the characteristic findings of pus cells, mucous, micro-organisms and spermatozoa. Examination of seminal vesicles has a very important bearing on the question of focal infection and gonorrheal rheumatism. It is a known factor that many cases of chronic arthritis and neurasthenia are due to a focus of suppuration in the seminal vesicles.

Palpation of the bladder may disclose an organ which contains a quart or more of urine and the bladder may extend nearly to the umbilicus. In cases of hypertrophied prostate with only moderate distension, the residual urine should be measured and its quantity noted.

Residual urine is the term applied to urine which remains in the bladder after the patient has endeavored to completely evacuate the bladder. It is an indication, in a way, of the degree of obstruction to the free and complete emptying of the bladder. A certain amount of information may be obtained by placing one finger in the rectum and the other over the bladder region; a thickening of the bladder due to carcinoma can be apprehended, or even a vesicle calculus, if it is very large may be felt.

Up to this point the practitioner can go without assistance, but when he has completed the various steps already described and the source of pus still remains in doubt; it is necessary to have recourse to the cystoscope and the radiograph.

With the cystoscope in the bladder the outline of the prostate can be distinctly made out and one can see if it is enlarged. Tumors can be seen and a fair idea may be gained as to whether they are benign or malignant. In cases in which the bladder has been forced to work against pressure, as in the case of stricture or hypertrophied prostate, the muscular fibres hypertrophy in bundles and trabeculi can be distinctly seen. The same similar condition takes place in a tabetic bladder where the innervation has been disturbed, and it is possible to make a diagnosis of locomotor ataxia by means of a cystoscopic examination of the bladder.

To the discovery of the ureteral catheter is due our present low mortality in kidney surgery. The urines from the right and left kidneys having been drawn off by the ureteral catheters; they must be examined for pus, bacteria, casts, epithelium or blood, and the quantity of urea estimated. In this way one can obtain an accurate knowledge as to whether the kidney is healthy or whether it is infected, how much urea it is capable of secreting, and the organisms which are responsible for the infection. If tuberculosis be suspected and the tu-

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The Death of Dr. Sargent

The world is the loser in the passing of Dr. Dudley A. Sargent, for many years a contributing editor to THE MEDICAL TIMES.

He was the head of a school for physical education in Cambridge and as a specialist in that particular field, Dr. Sargent stood foremost for forty years. He was director of gymnasium activities at Harvard University where he developed most of the modern gymnasium apparatus used in this country. His formula for testing strength and endurance of the athletes is employed annually on the students at Harvard and Radcliffe.

Dr. Sargent was also head of Sargent's Girl Camp at Peterboro, N. H., and it was at that camp that he died. Readers of THE MEDICAL TIMES will recall his contributions with interest. In his passing medicine in general and physical education particularly loses a mentor.

Chiropractic Brass

A podiatrist, in expressing his wrath because of the too-modest fees charged by his chiropodist brethren, recently remarked that the trouble with these men was that they suffered from an inferiority complex which grew out of the fact that in the course of their work they humbled themselves at the feet of their patients. On the other hand, he said, the chiropractor was a brazen fellow and charged big fees because of the fact that his patients were placed prone upon his table and were then beaten up by him.

This seems to us to be sound psychology, throwing considerable light upon the well known truculence of the chiropractor breed.

Abuse of the Ambulance Service

Writing in the *Long Island Medical Journal* for July, an anonymous ambulance surgeon points out that a fifth of his cases could as well have been treated by private practitioners either in their offices or at the homes of the patients. He estimates that the practicing physicians of New York City lost 25,000 calls last year because the persons concerned received free treatment by ambulance surgeons. So many of these patients are of the able-to-pay class, and so many of them deliberately call ambulances in order to obtain free medical attention, that the resulting situation constitutes a real abuse.

This, of course, is simply one more of the innumerable ways in which the medical profession is double-crossed economically all along the line.

We are indebted to this highly intelligent ambulance surgeon for his interesting revelations.

Sex Antagonism and Divorce

It is astonishing to what an extent factors chiefly intelligible to the physician play a part in modern marital infelicities. What happens in our divorce courts is largely camouflage; only the ostensible causes of trouble are exploited. What lies behind is a maze of such things as impotency due to more or less unconscious homosexuality, as sex antagonisms, as feminine suppressions and inhibitions, as masculine ejaculatio precox, etc. In other words, sexual factors that are not fully understood by the victims are concealed under a masquerade that serves legal purposes but is not really an essential part of the domestic drama.

For marital incompatibility read sexual incompatibility. Nine times out of ten that is the dark-complexioned gentleman in the woodpile.

We strongly suspect that the most fundamental and pervasive of the aforesaid factors is sex antagonism, since it is intimately related in genesis to the existing social order. Woman is still today, despite our vociferous protestations of industrial, economic, political and intellectual equality, relegated practically to second place. About the only way she has of "getting back" at dominating man is through her old weapon, sex; but it is sex used in a negative instead of the old positive way. It is a most formidable weapon.

It is not meant to be implied for a moment that there is any conscious, deliberate use of such a weapon. We are merely witnessing a psychological reaction based upon natural subconscious resentments of a rather vague kind.

We profess to be mystified about the failing prestige of marriage. We are simply stupid, for we have arranged a social order which is bound to wreck the institution. And it is just as well to bear in mind Bertrand Russell's warning that our present social order is destined for intensification at all points, so much so that its character in a few years will be nothing short, in Russell's words, of "monstrous."

It is the physician who not only understands the underlying sexual factors in these cases but who most often witnesses intelligently the wife's half-revealed hatred of the symbol of his oppressive sex, the husband, in times, for example, of strain due to family illness, particularly if there be associated economic stress.

The Mechanics of Arthritis

The old popular notion about abstinence from meat in the management of all types of arthritides still persists whether or not gout exists and whether or not the kidneys are incompetent for the products of nitrogenous metabolism, and we therefore see many cases of metabolic joint affections, which would be benefited by a reduction of carbohydrates excessive in to ban protein while they consume excessive quantities of bread and other carbohydrates, the consequence of which course, for them, is that they add the evils of protein starvation to those of faulty carbohydrate metabolism.

There can be but little prospect of relieving a more or less obese semi-cripple of his subacute or chronic peri-arthritis or arthritis so long as his joints are strained and otherwise damaged by excessive avoirdupois the result of too great a consumption of carbohydrates. Even when the trouble is of infective and not metabolic origin over-weight should be dealt with through regulation of the carbohydrate intake, merely upon "mechanical" grounds.

"Neurotic Contagion"

It is curious to note the effects upon the more stable elements in the population of unaccustomed ethnic contacts involving "exposure" to influences emanating from neurotic sources.

We see one effect upon minds normally staid enough which is derived from intellectual and literary sources. We have a welter of books and magazines produced by neurotic writers which is entirely opposite in its nature from the product of Anglo-Saxon genius and culture. Consequently we see at one end of the line the demoralization of the young woman of good American stock, and at the other end hysterical clergymen dividing into hostile camps on the issue of the creeds and other things related thereto. These things have a profound psychological significance rooted in ethnic factors. There is marked unrest under conditions that would not have disturbed our forefathers in the slightest degree.

Then we see the reaction upon the sick. Even our best people take their medical and surgical vicissitudes in a neurotic manner wholly unlike their grandparents or even their parents. As for the obstetric patient, she has adopted all the psychic reactions of the neurotic of different ethnical breed with marked exactitude.

Even though there is practically no intermarriage one does see results from ordinary social contacts in the present generation not unlike those which we are accustomed to think could flow only from a mixing of blood.

The physician occupies a particularly good vantage point from which to survey the passing show.

The poise of our fathers is passing. There's a reason.

The Road to Laughtertown

Would ye learn the road to Laughtertown
O, ye who have lost the way?
Would ye have young heart though your hair be gray?
Go learn from a little child each day.
Go serve his wants and play his play,
And catch the lilt of his laughter gay,
And follow his dancing feet as they stray,
For he knows the road to Laughtertown
O, ye who have lost the way.

—Katherine D. Blake.

Miscellany

Conducted by ARTHUR C. JACOBSON, M.D.

Will It Speed Up Production?

Our attention was recently attracted by the following newspaper item:

TO AID "GOLDEN RULE" NASH

WOMAN HEADS CINCINNATI MAN'S SOCIAL SERVICE DEPARTMENT
Special to The New York Times.

CINCINNATI, June 12.—Another step to spread the gospel of the Golden Rule in industry, not only in Cincinnati but throughout the country, was taken by Arthur Nash, President of the A. Nash Tailoring Company, who recently paid his employees a bonus of \$600,000 in stock of the company, when he appointed Mrs. May Cornell Stoiber head of the Social Service Department.

Mrs. Stoiber was reader at the New Thought Temple until April 25.

We read that last item carefully, and then we read it again, and then we did some thinking.

Now do a little thinking yourself, reader.

Our own guess is that the big idea is to increase production and lessen time lost because of sickness; through Pollyanna methods the workers will be cheered up, made more contented, and persuaded that they are never ill.

Well, no good substitute for beer has been found as yet.

We think the Nash Company is unduly optimistic. The idea is not so good as it seems.

Should it happen to work fairly well, however, you will witness a number of promotions from the New Thought rostrums to the factories.

Much better pickings in the world of big business.

An interesting transition.

Examination of Brooklyn Physicians

(Concluded from page 199)

the health examination a not insignificant part of their practice.

The total cost to the Committee on Dispensary Development was somewhat over \$1,000. The cost to the Kings County Medical Society is not easy to estimate; it would include such expenses as light, heat and the rent of space, as well as some \$75 in clerical and telephone expenses involved in arranging the appointments. For any permanent plan or for a physician making examinations in his own office, these expenses can be materially reduced. That is, the time spent by the physicians in charge in planning and arranging the work as well as the interpretation of findings can be omitted; also the \$67 expended in taxi fares and transportation of equipment. Excluding these expenses the cost amounted to \$5.42 per examination, divided as follows:

Medical Service	\$4.02
Technician	1.09
Laundry supplies and records...	.31

This special group required less time of the examining physicians in explaining conditions found and in convincing the examinees of the needs for treatment. For groups usually examined the doctors prepares individual instruction slips to make definite the needs for treatment or modifications in habits, to serve as a basis for action.

In planning the charge each physician will make in his own office, he must take into account not only his own time but such other elements as supplies, nursing or technician assistance, together with his routine overhead expenses. On the other hand, he

must bear in mind that the vast majority of people are not trained to expend money on prevention. They prefer to hang on to their dollars and "take a chance."

In Summary

1. The doctors in Brooklyn are in better general condition than other groups of men in the community—although on the basis of the sample examined, one-third of the fellowship might well practice "girth control."
2. The significance of such findings as hypotension or poor muscle tone needs scientific investigation. Also methods of sizing up psychological soundness need to be developed.
3. The medical service required in making health examinations is of a high order in that it requires not only time but also discriminating judgment rightly to interpret the significance of various minor findings in relation to habits of living.
4. The Brooklyn experience has been of value to our Committee in supplying us with a group of intelligent and friendly critics who can help plan next steps in developing the practice of pre-clinical medicine.

15 W. 43rd Street.

Fractures of the Skull

(Concluded from page 196)

Case 14. Record No. 1123. Admitted June 23, 1916. G. N., male, age 25, in profound shock and coma. Temperature 97.8, pulse 68. Bleeding from left ear, nose and mouth. Death in one-half hour.

Autopsy:—Fracture open, left humerus and right tibia, simple fracture of right humerus, fracture of the skull extending through pituitary fossa and right temporal bone. Large subdural clot in frontal region. Laceration frontal lobe of the brain.

Case 15. Record No. 1166. Admitted July 2, 1916. J. G., male, age 34. Coma, shock, pulmonary edema. Death in 12 hours. Autopsy lacking.

Case 16. Record No. 1192. Admitted July 9, 1916. T. C., age 3, male. Fell from third story to street. Coma, shock. Right eye closed from edema, right pupil dilated, abrasion frontal eminence, right parietal and occipital region. Depressed fracture right parietal. Bleeding from nose and mouth. Death in one hour. Autopsy lacking.

Case 20. Record No. 2388. Admitted August 9, 1916. T. F., age 5, female. Seven hours before admission fell from a fire escape. Unconscious. Died October 22, 1916.

Autopsy:—Fracture of left knee, abscess of brain.

Case 22. Record No. 9905. Admitted February 20, 1916. P. K., age 44. Deep coma, shock. Death in 19 hours. Pulse 88, rapid rise to 124. Temperature 106. Fracture of base, wet brain, contusions, lacerations right frontal lobe of the brain.

Case 24. Record No. 1925. Admitted November 6, 1916. F. S., age 9, male. Day before admission fell from wagon and was stunned, became drowsy in six hours, found unconscious next morning. Admitted in deep coma, temperature 98.3, pulse 80, dilated pupils, nystagmus to left, no light reaction. Spinal fluid bloody, death in six hours.

Autopsy:—Middle meningeal hemorrhage, clot 4 by 2½ in left temporal region, fracture in right fossa, crossing temporal and sphenoid 2½ inches long.

Case 25. Record No. 1978. Admitted November 1, 1916. J. N., age 2, male. Fell down one flight of stairs, one and one-half hours before admission. In deep coma, pulse 74, temperature 98. Bleeding from left ear. Pupils dilated. Blood pressure 55-52. Death in twelve hours.

Autopsy:—Fracture of middle fossa. Middle meningeal hemorrhage, epidural clot.

Case 29. Record No. 2025. Admitted November 15, 1916. H. E., male, age 30. Found unconscious in hallway, admitted in coma without any other history. Bloody fluid on spinal puncture. Temperature 99.2, pulse 80. Death in a few hours.

Autopsy:—Fracture parietal and occipital bones. Epidural clot in the left temporal region. Laceration in the right temporal lobe.

Case 30. Record No. 2058. Admitted November 18, 1917. T. H. C., age 45, injured 12 days before admission. Received scalp wound. Local applications of home remedies. No treat-

ment by physician. Two days before admission "fits," mentally unbalanced, drowsy. Scalp wound over left parietal region, exposing pus leading to large depressed fragments of bare bone. Dilatation of pupils. Right facial paralysis, exophthalmos, tongue directed to right. Blood pressure 140-73. Temperature 101.2, pulse 124.

Operation:—Skin flap, center at depressed wound, trephined, depressed fragments elevated, removed, dura opened, pus issued from subdural space. Many depressed spicules of small comminuted fragments removed from dura. Dura perforated by spicules. Subdural space drained. Death in twelve hours.

Case 31. Record No. 3074. Admitted March 18, 1917. M. O., Italian, age 21, male. Patient was admitted in coma. There was bleeding from the nose. Diagnosis:—Fracture of the anterior fossa of the base. Died in 20 minutes. See Autopsy record.

Case 32. Record No. 3155. Admitted March 23, 1917. R. J., age 32. Coma with a history of injury to the head 10 days previously. Pulse 104, temperature 101.2. Upon examination there was a laceration of the scalp over the left occipital region, percussion note suggestive of a cracked pot over the left vault. Marked lateral nystagmus, left pupil larger than right, ecchymosis over left mastoid, edema, sero-purulent discharge from the left ear. Blood pressure: 110 systolic, diastolic 60. On the left side of the neck extending from the angle of the jaw to the clavicle was a hard cord-like mass about the size of the little finger. There was a bilateral "Koenig" sign.

Diagnosis:—Fracture of the skull, intracranial injury, basal meningitis, thrombosis of the internal jugular vein and lateral sinus. Operation:—Subtemporal decompression. Fracture of the vault extended through the parietal and temporal bones, laceration of the brain in both frontal lobes and left temporal lobe. The internal jugular vein was ligated on the left side of the neck. Patient died in a few hours.

Autopsy:—Showed evidence of subdural clot over the left parietal and frontal region, laceration of both frontal lobes and left temporal lobes. The fracture extended from the left parietal through the left temporal bone to the foramen magnum. Brain was covered with a thin adherent membrane, marked edema, basal meningitis, thrombosis of the internal jugular vein extended from the base of the neck to the foramen lacerum posterus.

Case 33. Record No. 3285. Admitted April 15, 1917. J. De B., female, age 17, profuse hemorrhage from the ears and nose, in coma. Pulse 48, respiration 20, breathing stertorous. Spinal puncture showed blood tinged fluid. Death in one hour and twenty minutes after admission.

Autopsy record:—There was a laceration of both frontal lobes, an extensive basal fracture extending from the external occipital protuberance through the middle fossa to the foramen magnum and into the jugular foramen. Diagnosis: Fracture of the middle fossa of the base, extensive lacerations of the brain.

Case 34. Record No. 3298. Admitted ——. E. L., age 9, male, unconscious, extremities spastic, irritable, bleeding from nose and mouth. Spinal fluid bloody. Pulse 140, temperature 101. Operation:—Decompression subtemporal. Death in four hours after operation. Extensive subdural hemorrhage over the occipital region and left temporal region, extensive fracture of the vault extending from the left ear upwards and backwards over the left parietal to the right parietal and through the foramen magnum. Laceration of the left frontal and temporal lobes of the brain.

Autopsy:—Extensive subdural hemorrhage. Lacerations of the brain.

Case 36. Record No. 3378. Admitted April 24, 1917. S. B., age 3. Shock. Bloody spinal fluid. Pulse rapid and irregular. Operation:—Exploration, laceration of the middle meningeal artery. Double subtemporal decompression. Death in four hours.

Autopsy:—Evidence of decompression, marked subdural hemorrhage, fracture of the vault extending downwards and backwards for two inches, extra dural clots in the right middle fossa.

Case 38. Record No. 3836. Admitted June 12, 1917. J. U., age 48, male, had been struck by street car and rendered unconscious. Restless, contusion and edema of the right eye extending into the temporal region, contusion in the occiput and pupillary dilatation. Spinal puncture bloody. Vomiting and twitching of both arms and the left leg. Pulse range between 74 and 168, temperature from 100 to 102. Death in two days after admission.

Autopsy:—Extensive subaponeurotic hemorrhage over the frontal region and the right temporal region. Left temporal lobe lacerated, fracture through the right temporal bone, extending forward over the parietal. Subdural hemorrhage.

Case 40. Record No. 3897. Admitted June 15, 1917. E. K., male, age 16 months, pulse 160, temperature 100.2. In eighteen hours temperature rose to 108. Child was unconscious, extreme shock, cracked pot note over the vault, dilated pupils, eyes deviated to the left. Spinal puncture showed blood. Diagnosis:

—Fracture of the skull with intracranial injuries, immense hematoma of the scalp, occipital and temporal regions. Autopsy lacking.

Case 42. Record No. 4516. Admitted ——. E. R., female patient, age 38. Jumped from the roof of a neighboring tenement. Death in two minutes after admission. Autopsy lacking.

Case 44. Record No. 4836. Admitted October 4, 1917. M. O., age 2, female. Temperature for three days below 100, pulse range 90 to 120. Fourth day rise of temperature to 104, two days later 106, continued there for about three days, terminal temperature 106 3/5, pulse range during febrile period 140 to 180. Retraction of head, blood in spinal fluid, discharge from the left ear, bilateral Koenig sign. Increased patella reflexes.

Autopsy:—Dura adherent throughout the skull. Over the cerebral hemispheres was a thick layer of yellow pus. A lacerated linear fracture of the base of the skull through the middle fossa running across the petrous bone.

Case 46. Record No. 5058. Admitted September 25, 1917. A. C., male, age 7, bleeding from nose, mouth and left ear, unconscious, child expired in a few moments.

Autopsy:—Multiple injuries, fracture of the base from the orbital plate of the middle fossa of left side, across to the petrous portion of the temporal bone.

76 Hanson Place.

Diagnosis and Treatment

Protein Therapy in Ophthalmic Conditions

In the Proceedings of the Minnesota Academy of Medicine, meeting of April 9, 1924, there was a discussion of the uses and results of nonspecific therapy in infected eye conditions.

Dr. John Fulton of St. Paul reported a case of beginning panophthalmitis due to trauma successfully treated by milk used as a foreign protein. When he doctor saw the patient the first time, he eye balls and lids were badly inflamed. In the evening of the same day after dilating the pupil with atropin, the doctor was called again and found a very severe septic inflammation; lids and bulbar conjunctiva being edematous with many small hemorrhages in the conjunctiva. The patient suffered great pain in the eye throughout the night. The symptoms increased the next day. The pupil no longer responded to atropin. The edges of the corneal wound were white with septic matter. There was pus in the anterior chamber. All the structures of the eye were badly inflamed showing a typical picture of a commencing panophthalmitis.

In this condition the protein treatment was started, 6 cc. of milk being given intramuscularly. The next day 12 cc. of milk was injected intramuscularly with the most gratifying results. The patient's temperature went up to 101°; the pupil began to dilate and the intense tenderness of the eye ball which had been caused by the rapid onset of the septic iridocyclitis had almost completely disappeared. Injections of boiled milk were continued for some days until inflammation disappeared and the eye was soon restored.

After this case there was a discussion on the question of protein therapy in eye diseases. There were mentioned reports from De Andrade, of Rio de Janeiro, who describes most gratifying results in treating post-operative iridocyclitis and three cases of gonococcus infection which he obtained prompt and complete relief. He never observed unfortunate effects. It was further said that of the many foreign proteins now used in the treatment of septic diseases, milk derivatives seemed to be the most important, reliable and marvelous in their effect.

In eye diseases protein therapy is especially resultful in acute iritis, iridocyclitis and gonorrheal conjunctivitis. Furthermore, it is a powerful prophylactic, with the object of reducing the chances of infection, as for instance, to prevent septic complications in cases of cataract operations.

In the discussion, Dr. Brown reports that he first started injections with certified milk with unsatisfactory results; later he used pure milk and the results became good.

The question of standardizing the milk used in such therapy was discussed, the most important one because by-effects by milk toxins should be avoided.—The Journal-Lancet, No. 11, June 1, 1924, p. 305.

Millstone Flour and National Nutrition

The Ward & Belfrage writes interesting letters on this subject: "I was told that in 1816 a loaf after baking would stick

to a wall against which it was flung! In those days the nation had only English-grown wheat, and in 1816 was a very wet season. And before the introduction of American flour the poorer classes learnt to their cost that bread baked from English flour became musty after a time, as did the flour itself. Hence, when white bread, free from mustiness, was introduced, it was hailed with joy by the working classes. And now they will not eat stone-milled flour because the bread is not white. They have learned to regard whiteness as the sign of excellence.

"I have recently induced a local baker at Addlestone to procure from a Horsham miller the same pure whole ground flour as is supplied to the Blucoat School. It makes delicious bread, though less suitable for pastry I am told. It has been adopted by a number of local families, but so far as I can learn not one of the working class will touch it. Personally I could make a meal of it alone.

"This baker tells me that the mustiness which comes in stone-milled flour is due to the retention of what he calls the 'oil' of the grain, which is present in the germ and the inner coat. If he is correct it is just in those parts of the grain where the nourishment resides. He also tells me that stone-milled flour will only keep sweet for a period of weeks, whereas American flour will keep for months, because all these highly nutritious parts have been carefully removed from the flour exported, and only the starchy elements sent to us.

"So there is an underlying justification for the objection to stone-milled flour. How can it be overcome? I suggest that the importation of foreign flour be absolutely interdicted and only the importation of grain be permitted. This would give an immense stimulus to all our mills, especially the small mills scattered along our streams. But we must either fight or enlist on our side the mighty millers, who look for profit to the immense output from their mills of a poor, innutritious white flour, which has only one merit—that is, that it will keep indefinitely.

"The admixture of American and Indian grain with our own less sun-dried corn should give a flour which will keep for a reasonable time, either as flour or as bread. But it is no good to conceal the fact that it will not keep as long as the steel-milled white flour"—I am,

A. O. WARD.

"Dr. Shelley has done good service in again bringing this important matter to the attention of the profession.

"Not long ago I discussed this question with a director of probably the largest milling business in this country. I urged the same plea for whole-wheat flour as Dr. Shelley has put forward, and was met by the following objections:

1. The public in this and most European countries demand white bread, and the whiter it is the better they like it. Every attempt, such as that made some years ago by the *Daily Mail*, to popularize whole-wheat bread has hitherto failed.

2. Unless the medical profession is in a position to tell them with absolute confidence and unanimity that they cannot be healthy if they do not eat whole-wheat bread the people will not set aside their prejudice against it.

3. That the loss of vitamins which takes place in the present system of milling can be met by eating other foods which contain them.

4. That whole-wheat flour is difficult to keep sweet for any length of time.

"I pointed out to him that the miller is probably prejudiced in that he gets back as much from the farmer for the 'offal' (which contains the vitamins) as he pays him for the wheat. He agreed, but said that it would be more profitable for the miller to use simpler machinery, since less thorough milling would be necessary. At present the highest grades of flour are those which have been most thoroughly freed from 'offal' and this demands elaborate machinery and more labor.

"The fact remains that many gross defects in health are now being traced to vitamin starvation, and this in all classes of the community. The well-to-do are deprived of foods which are grown and treated artificially in order to get them out of season; the poorer classes often cannot afford to buy sufficient fresh fruit and vegetables, meat, and eggs. Therefore, it seems all-important that the bread which enters so largely into the diet of rich and poor alike should not be deprived of its vitamins.

"Probably the best way to arrive at a conclusion in this matter is that the whole question should be considered by a special committee, set up by Government, and formed by one or two recognized food experts, representatives of the milling industry, and one or two practical and well known physicians.

"A pronouncement by such a body, issued by the press, would influence public opinion, and if in favor of whole-wheat bread would create the demand. I offer the suggestion to the present Government, who profess to have the well-being of the greatest number so much at heart."—(*Brit. Med. Jour.*, No. 3306, 1924.)

S. HENNING BELFRAGE.

Pyuria

(Continued from page 210)

bercle bacillus cannot be found in the urine, recourse should be had to animal inoculation. The supposed tubercular urine should be injected into the peritoneal cavity of a guinea pig and the pig autopsied three weeks later. If tubercle bacilli were contained in the urine, the peritoneal cavity of the pig will be found studded with tubercular nodules.

The functional tests for separate kidneys is another important fact to consider. The use of indigo carmine intravenously and watched for in different ureteral catheters is based on the fact that a normal kidney will secrete indigo carmine in five to eight minutes after it is injected; whereas any disease on the part of the kidney will delay the excretion. It is utilized by catheterizing the ureters and collecting the right and left urines and noting the time, appearance and concentration of the blue dye after the injection; or it may be carried out by watching the ureteral openings with the cystoscope and noting the time of appearance of the blue swirl in one or both ureteral openings. The urines should be obtained simultaneously in cases of healthy kidneys and a delay of a number of minutes on one side indicates a diseased condition of that side.

The phenosulphonethalein test is used in the same way as the indigo carmine, it is given intravenously and where the function of both kidneys together is to be estimated a permanent catheter is placed in the bladder, left in for two hours and estimate made. For the estimation of both kidneys, the ureteral catheters are left in situ, injections given and two specimens collected, each of one hour duration. A return of at least twenty percent, in the first hour is necessary for safety and operation. Below twenty percent of thalein, indicates disease of the kidney which is liable to bring about anuria and death after an operation. In two hours' collection after injection the thalein estimation should total about eighty percent.

In most of the cases, to complete our systematic examination, it is necessary to have recourse to the radiograph to determine the condition of kidneys, ureters, bladder and prostate.

To determine the condition of the kidney, one sees their outlines, which can only be more or less distinctly seen, and the shadows occurring in their substance. To determine if the pelvis of the kidney is largely distended or normal in size we have recourse to pyelography. By this manipulation the pelvis of the kidney is filled with a solution which throws a dense shadow; the radiograph is then taken and the size of the pelvis of the kidney is denoted by the resulting shadow. When pyelography first came into use, collargol was the silver salt used. This was found to be toxic in its effects and detrimental to the substance of the kidney, and now has been replaced by twenty percent solution of sodium bromide or sodium iodide, which so far appear to be free from danger. To determine the question as to whether a shadow in the ureter is a calculus or a calcified gland the ureteral catheters which are of X-ray type are left in situ when the radiograph is taken.

The use of the radiograph in the bladder consists mainly in determining the presence of diverticulae, stones, and the size of the prostate. The bladder is filled with a twenty percent solution of sodium iodide, a radiograph taken and the bulging diverticulum can be clearly seen in the shadow; or a hypertrophied prostate show up as a shadow in comparison to the shadow of the solution of sodium iodide.

The following case histories were selected from a

series, with the idea of bringing forth the importance of diagnosis as to source of a pyuria.

Case 1—Pyelitis—Left Kidney: Bacilli Coli. H. G. age 30, housewife, married, two children, referred by Dr. M. S. in Jan., 1923. Has never been ill. About two months ago patient began to complain of frequency, urgency and burning on urination. A diagnosis of chronic cystitis was made and repeated bladder lavages given which brought no relief. There was a constant desire to urinate, especially at night, accompanied by agonizing pain. Cystoscopy: Catheterized bladder specimen was typical of pyuria and on microscopic examination showed clumps of pus, heavy trace of albumin and considerable red blood cells; culture shows presence of colon bacilli. The bladder itself showed marked inflammation of mucous membrane, the mucosa was intensely reddened and edematous throughout the entire extent of the bladder. The trigone region was inflamed and adherent pus shreds was seen throughout its whole area. The right ureteral orifice was found in normal location, showed no peculiarities and a No. 5 French catheter entered all the way without any obstruction. The urine obtained was negative. The left ureteral orifice was difficult to find and after locating it was seen to be intensely inflamed and edematous and pus was seen discharging from it. After some difficulty a No. 5 French catheter was passed and urine obtained was cloudy which on examination showed pus, albumin, red blood cells and colon bacilli. X-Ray taken with catheters in situ showed negative for shadows in kidney, bladder and ureteral regions. The left pelvis was lavaged, using $\frac{1}{4}$ of one per cent silver nitrate solution, and after three lavages the patient's symptoms improved. On subsequent examination I found the bladder mucous membrane markedly improved.

The points to be considered in this case are: That it cannot be too often emphasized that frequency and strangury is more likely to be evidence of disease of the kidney than the bladder. That one must not forget that only by the ureteric catheter can it be accurately determined that one or both kidneys are infected and that the infection of the diseased kidney can at once be cut short with relief of symptoms by renal lavage.

Case 2—Prostatitis with Secondary Cystitis. H. F. age 26, male, married, referred by Dr. J. S. in Feb., 1923, with history of pyuria, strangury and frequency, condition lasting two months. Had attack of gonorrhea in 1920 and another in 1922. Bladder urine contained pus cells, red blood corpuscles and bacillus coli. Cystoscopic examination showed the bladder mucous membrane inflamed, adherent shreds being present. Trigone dull red and swollen. Ureter openings normal in appearance and normally located, show no peculiarities and easily catheterized all the way without obstruction. Both urines obtained were negative. Prostate enlarged and swollen with few cyst-like bodies on the roof. Bladder neck red, spongy and granulating. Posterior urethra congested and post montanum region inflamed. Colliculus enlarged with base granular. On palpation per rectum the prostate was found to be enlarged and expression slide showed clumps of pus and the presence of colon bacilli. This case was benefited by massage of the prostate and instillations of the posterior urethra, plus vesical lavage.

Case 3—Primary Cystitis—ten years' duration—operation—no benefit. Patient M. K., age 31, married, came to me in Feb., 1922, with a history of pyuria and frequency lasting for ten years. The history of this case was very interesting. Patient denied any gonococcal infection. Blood was examined or Wasserman and found to be negative. In year 1912 patient had some irritating substance injected into the bladder to produce pyuria which would disqualify him for compulsory service in Russian army. He was rejected and since then he has been complaining of the milky appearance of his urine and frequency, especially at night. He has been under treatment by various physicians for past six years; having been cystoscoped and given vesical lavages. I cystoscoped him and found that the bladder urine was milky in appearance, loaded with pus, trace of albumin, few red blood cells and on culture showed the presence of colon bacilli and staphylococcus aureus.

I found an extremely irritable bladder, the mucosa was intensely reddened and edematous throughout the entire extent and flakes of adherent mucus was seen attached throughout. The trigone was reddened and in granular condition. Both ureteral openings were located in normal situ, showed no peculiarities and easily catheterized all the way without any obstruction. Urines were collected from both kidneys and found to be normal. Prostate normal in appearance and the posterior urethra found slightly congested, colliculus normal. X-Ray taken with catheters in situ showed no shadows in kidney, ureteral or bladder regions. I examined the prostate per rectum, found it normal in size and the expression slide showed negative for pus and micro-organisms. I made a diagnosis of primary cystitis and ordered vesical lavages using mercurchrome, then changing to acriflavine and other drugs plus the use of autogenous vaccine

without any beneficial results as to the condition of his urine.

I cystoscoped him two months later and found the same findings; also did a pyelogram of right pelvis using 10 c.c. of 20 per cent sodium iodide which showed up normal outline of the pelvis and calices. I kept on treating the patient and found no change. At later date I consulted Dr. Maximilian Stern, who cystoscoped and radiographed him; all findings were normal except for the bladder and he agreed to the diagnosis of primary cystitis. He suggested doing a cystotomy, which was done, and tube was inserted into the bladder. It remained in place four weeks, during which time I irrigated daily through cystotomy tube. The tube was removed and the wound allowed to heal. He has been cystoscoped four more times since the operation and had pyelograms done on both sides which were negative, and on all these occasions both kidney urines were negative. At the present time his urine is still very cloudy, but his frequency is somewhat controlled. I cite this case to show that I was dealing with a case of primary cystitis, which is a rare condition due to irritation of some substance injected into the bladder, causing so much damage to the mucous membrane that no treatment could benefit him.

I wish to lay stress upon pyuria as being a manifestation of pus along the genitor-urinary tract and that it is necessary to have the patient cystoscoped before a diagnosis as to the source of the pus can be made.

Every case of pyuria merits prompt investigation because it may be the first sign of a condition essentially progressive and incurable unless there be early surgical intervention.

320 Second Avenue.

Make Up of Criminals

(Continued from page 209)

juvenile thieves through lack of proper parental control is the direct result of intemperance in the home.

I believe, from my experience, that the drug evil is one of the main causes of crime, especially criminal deeds of a strong arm nature. It has been stated that prohibition has caused an increase in the number of drug addicts. I am inclined to disagree with this view as drug addicts, as a rule, are rarely liquor drinkers. The increase in the number of drug addicts may be due in part to the war. Men desperately wounded and suffering have been given drugs to ease the pain, and, the pain not entirely disappearing, they have acquired the habit in seeking ease from physical distress. Drugs unfit the user to earn his living honestly, and derange his mind to such an extent that he may commit any offence, even to murder. He will steal or rob to obtain money to get the drug, or break into stores to steal the drug itself. International action is needed, if this curse is to be abolished.

Prostitutes, having an influence over men whom they have induced to become companions, will cause the men to commit crime, so that from the proceeds they may live in luxury for a time. Many cases of this kind have been met by experienced police officers.

Another great cause of crime is the gambling evil. Many instances could be cited, where trusted employees of banks and other institutions have appropriated funds of their employers for the purpose of meeting their loss on the race track, in poker games, etc. Many men are serving terms in the penitentiary who can truthfully say that gambling was the cause of their downfall.

It is contended also that the theatre and movie show tend to cause crime by representations on the stage or screen, giving the assembly an object lesson or demonstration of murder, theft, abduction, elopement, contempt for constituted authority, and disregard of law and order. In most, if not all, pictures the crook is the hero and the representative of the law one to be despised. The manner of robbing banks and stores has been depicted and therefore is apt to leave on a youthful mind a most damning impression. When the criminal and the harlot, with all their evil tendencies, are paraded before the eyes of the young, morality is shown as a handicap.

The automobile has become a great aid in the commission of crime and the escape of the criminal. It is a perfect means for approach and a quick getaway; silent and swift. Many thousands are in use, therefore no particular one is noticed and may stand anywhere without attracting attention. The motor car is the mechanical ally to the bank robber, highwayman, and murderer, and so is the acetylene torch to the safecracker. Through the carelessness of owners, highpowered autos are left unprotected on the streets, providing a means for the crooks to commit crime, who abandon the car often in a damaged condition after it has served their purpose. In recent years murders, bank robberies, holdups and other major crimes have increased, and in my opinion the most potent factor has been the automobile. With expert drivers, the chance of immediate capture is uncertain.

No doubt industrial depression has had an effect in increasing petty thefts. Persons with an elastic conscience may think that it is not a crime to steal if they cannot obtain work. Some say that the country owes them a living, and if it cannot be obtained by one means, it must be got by another. However, it must be said of the average industrial worker that he will suffer great hardship before he will resort to crime for a living. Whether the large number of serious crimes is the result of men unable to obtain employment is an open question.

Poverty follows on the heels of industrial depression and unemployment. Where want exists there is bound to be deterioration in the physical and moral fibre of those concerned. Anxiety eats into the heart and soul of parents who have children dependent on them, and as a result there is not the same resistance to temptation. Civic governments are alive to this question and have been endeavoring to provide work for the breadwinners, and relief for distressed families. Measures of this kind will have a tendency to prevent petty offences at least.

Wealth in the hands of an unscrupulous man is a menace to a community. He has the means to corrupt, to break up families, ruin young women, and in many other ways be an agent for crime. On the other hand, a man of wealth in providing for the poor and needy, hospitals, homes, and sanitariums, could bring joy to the hearts of the unfortunate. If the rich could assist those in poor or unfortunate circumstances, contentment would result, and contentment is a forward step in crime prevention. There are many examples of generous citizens of wealth who have given their time and money to make this old world more contented and happy, but they are all too few.

Many young girls have been ruined through associations formed in public dance halls. These establishments have become a serious problem for the police of this city. Some forms of dancing as exemplified in public dance halls are positively indecent, and every effort should be made towards reform. Surely we do not want such immoral suggestive exhibitions.

The legislature of this state has been enacting laws to prevent crime with regard to poolrooms. I consider these places as the greatest school for young criminals in existence. They have turned out more criminals than any other agency that I know of, not even excepting the bar room of history. Poolrooms are the rendezvous for the idle, the lazy, the crook, dope fiend, bootlegger, etc. Here the master thief obtains his recruits. Analyzed, the majority of cases of shopbreaking and housebreaking originated in the poolroom, and we have learned that many of the big robberies were planned there also.

Ignorance is in some cases the indirect cause of crime. Ignorance is certainly a handicap which many boys have had to carry through life, poverty or carelessness on the part of the parents being responsible for this unfortunate condition. It follows that where there is ignorance there is bound to be less regard for the rights of others. I do not wish to infer that only the uneducated are inclined to become criminals, or that they are such because of their ignorance. Some of our most dangerous crooks are men of high education. In recent years, the State has done much to provide means whereby the young of both sexes may be well educated. This may or may not have its effect in crime prevention.

It has been stated that the large increase in crime is the direct result of the Great War; that the training which the young men received during the war period is one of the causes; the equipping of these youths with arms, and the fact that life, especially of an enemy, was of little value, may have had some bearing or influence. When demobilization took place, thousands of young men were left in idleness with only a small gratuity. When they had spent this, and were unable to obtain employment, they in many cases took to crime. To what extent this was so can only be determined by a careful analysis of the criminal records of this country.

Persons of good disposition and temperament seldom commit crimes, but those of contrary temperament and disposition may, according to the mood they are in.

Regarding feeble-mindedness and semi-insanity, those affected in this manner deserve sympathy, as they are seldom responsible for their condition, and should be kept under close supervision, because they are easy subjects for criminals to persuade to take part in crime of any kind, and sometimes are possessed of criminal instincts themselves.

Bad companionship has been the cause of many boys going astray. It has been said with truth that one bad boy can contaminate a whole neighborhood. Most police departments have had to deal with gangs of youths led by one bolder and more evil than the others, who have committed crimes of the most serious nature that older criminals would hesitate to touch. Many cases could be cited where boys made admission after arrest, that evil companionship was responsible for their downfall.

(Continued on page 24)